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Networking and Networks as Tools for Regional Spatial Development and Planning
Human Settlements' Development Potentialities in the Western Part of Egypt

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By

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For Egypt and its People

من أجل مصر و شعبها

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Abstract

This doctoral thesis investigates the possible use of regional networking and networks as tools for regional development and planning in the Western part of Egypt.
It is quite a challenge, because of the uniqueness of this region making it different from conventional development regions. The development assets of such a region are not as "evident" as of better known regions, because they are of fragmented nature. This requires a careful way of handling for regional development interventions.
This remote peripheral desert region already went through successive attempts of regional development. However, because of not taking into account its assets and potentials, poor results were achieved.

It is argued that regional development should be built on the existing regional assets in a collective and integrated way. These assets including several clusters among them are spatial. These relate to the desert natural landscape, cultural and historical monuments, desert vernacular architecture and settlement fabric, and the physical infrastructure in the region. It is argued that through collaboration between the different actor-groups in a process of networking and creating regional networks, development visions, strategies and spatial plans could be made capitalizing on the region's own assets.
The main aim of such a development intervention is to improve the quality of life in the region's settlements and to create job opportunities, while alleviating regional inequalities in a way to keep its people living there instead of migrating to other regions.
Based on the region's assets, the doctoral study proposes the establishment of two regional networks, the Desert Loop for tourism and the New Valley for agriculture. Both networks have strong spatial dimensions and impacts, as both of them define certain locations in the regional space and transform them into meaningful places through a set of key projects.

The contribution of this research is considered substantial to both theoretical and contextual aspects. It is one of few researches investigating the use of networking and networks for regional development in a developing country, it looks at the dynamics of combining networking with and within hierarchical systems, and it tries to define the spatial dimensions and impacts of regional networks. At the same time, it presents a new approach for regional development to the Egyptian context, while critically analyzing the ttransformations in the planning system and its relation to the development attempts in Egypt. Such an intervention is the first of its kind.
In carrying out this study, a proper theoretical background on regional development and networking and networks was built, serving as a theoretical framework of analysis.
Using this framework, the previous regional development interventions in Egypt and the study region were critically analyzed and evaluated to understand the line of thought that governed them and identifying its flaws. Through a comprehensive case study of the Western part of Egypt, contextual settings were identified, with an in depth analysis of regional assets and development potentialities, as well as the existing functional, physical and actor relationships in the region that could be developed into networks. This was done through an extensive fieldwork that included field visits to the region and holding interviews with key officials and planners.
Thus, this thesis is considered the first important step of ending the remoteness of this region and bringing it to the center of attention.

Netwerking en netwerken als instrumenten voor regionale ruimtelijke ontwikkeling en ordening. Ontwikkelingsmogelijkheden van menselijke nederzettingen in het westen van Egypte.

Abstract

Deze doctoraatsthesis onderzoekt de potenties van regionale netwerking en netwerken als middel voor regionale planning en ontwikkeling in het Westelijk gedeelte van Egypte. Dat is een behoorlijke opgave, aangezien deze regio uniek en bijgevolg ook zeer verschillend is van de conventionele ontwikkelingsregio's. De ontwikkelingspotenties van zo'n regio zijn niet zo 'evident' als die van de beter bekende regio's aangezien ze van nature gefragmenteerd zijn. Dat vraagt een zorgvuldige behandeling voor regionale ontwikkelingsinterventies.

Deze afgelegen perifere woestijnstreek onderging reeds opeenvolgende pogingen tot regionale ontwikkeling. Nochtans, als gevolg van het niet in rekening brengen van zijn troeven en potenties, heeft dit slechts geleid tot magere resultaten. Het is gesteld dat regionale ontwikkeling op een collectieve en geïntegreerde manier moet voortbouwen op de bestaande streekgebonden voordelen. Deze troeven en verscheidene clusters ervan, zijn ruimtelijk. Dat houdt in: het natuurlijke landschap, de culturele en historische monumenten, het vernaculaire weefsel van nederzettingen en woestijnarchitectuur, en de fysieke infrastructuur van de regio.

Het is gesteld dat via samenwerking tussen de verschillende actiegroepen in een proces van netwerking en tot stand komen van regionale netwerken, er ontwikkelingsvisies, strategieën en ruimtelijke plannen kunnen opgemaakt worden vertrekkende vanuit die lokale troeven van de regio. Het voornaamste doel van zo een ontwikkelingsinterventie is de levenskwaliteit in de regio te verhogen en werkgelegenheid te creëren, en tegelijk ook de regionale verschillen zodanig te balanceren dat de bevolking er blijft wonen in plaats van te migreren naar andere gebieden.

Gebaseerd op de streekgebonden troeven, stelt de doctoraatsstudie voor om twee regionale netwerken op te zetten, zijnde de *'Desert Loop'* voor het toerisme en de *'New Valley'* voor de landbouw. Beide netwerken hebben een sterke ruimtelijke dimensie en impact, aangezien ze beiden enkele locaties in de regionale ruimte definiëren en hen transformeren tot betekenisvolle plekken via een reeks sleutelprojecten. De bijdrage van dit onderzoek wordt gezien als substantieel voor zowel de contextuele als de theoretische aspecten. Het is een van de weinige onderzoeken die het gebruik aankaarten van netwerken en netwerking voor regionale ontwikkeling in een ontwikkelingsland. Het kijkt naar de dynamieken van het combineren van netwerking met en in hiërarchische systemen, en het tracht de ruimtelijke dimensie en impact van de regionale netwerken te bepalen. Tegelijkertijd introduceert het een nieuwe aanpak voor regionale ontwikkeling in de Egyptische context, vanuit de kritische analyse van de transformaties in het planningssyteem en de relatie tot ontwikkelingspogingen in Egypte. Zulk een interventie is de eerste van zijn aard.

Bij het uitwerken van deze studie is een degelijke theoretische achtergrond voor regionale ontwikkeling, netwerking en netwerken opgebouwd, die dienst doet als theoretisch analysekader. Gebruik makende van dat kader, zijn eerdere interventies voor regionale ontwikkeling in Egypte kritisch doorgelicht en geëvalueerd met het oog op een beter begrip van de beleidslogica en op de identificatie van zijn gebreken. Via een uitvoerige casestudie van het Westelijk gedeelte van Egypte, zijn de contextuele aspecten erkend met een diepgaande analyse van zowel de regionale ontwikkelingstroeven en potenties, als van de bestaande functionele en fysieke verbanden en relaties tussen actoren in de regio die zich kunnen ontwikkelen tot netwerken. Dat is gerealiseerd via uitgebreid veldwerk en terreinbezoeken in de regio en via interviews met sleutelambtenaren en planners.

Deze doctoraatsstudie kan aanzien worden als een eerste belangrijke stap naar het omkeren van het isolement van deze regio en er aldus de centrale aandacht op te vestigen.

Sleutelwoorden; regionale ontwikkeling, ruimtelijke planning, netwerking, netwerken, beleid, ruimte definitie, fysieke infrastructuur, Western Desert, New Valley, Egypte.

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I- Introduction: Thesis Settings

Egypt, whose history goes back to ancient times, is known over the centuries as one of the cradles of civilization. This nation like many others passed through times of prosperity, as well as misery but never of despair[1].

Since the dawn of humanity the Egyptians lived by the Nile, which they called the "source of life". However, since the second half of the 20th century the Nile Valley is witnessing an unstoppable population boom that led to a stark increase in the population densities of its cities and villages causing many negative implications, some of which are considered as threats to the well being of this nation. For that reason, many attempts for developing other regions in Egypt are and were made to make them of attractive enough for people to relocate to them, and ease the pressure on the Nile Valley. However, many of these attempts either failed or were not fully successful in achieving their objectives and in introducing sufficient incentives to attract people from the Nile Valley and Delta. Thus, there is a need to consider a new approach for regional development.

Such an approach should be developed based on the use of the specific assets, opportunities and forces of each region. It should be based on a joined cooperation between the key actors in the region supported by an incentive policy from the national government and possibly international bodies e.g. United Nations, European Union, etc. Within this local driven policy networking and the creation of networks are argued to be proper tools to achieve regional development. Accordingly, this research investigates the use of these tools in the development of the Egyptian regions and examining this approach through a case study region, which is the Western part of Egypt.

It is postulated that this use of networking and networks in the development of the case study region will enhance its livability and prosperity by introducing job opportunities and capitalizing on its relative autonomy of spatial qualities, hence, enhancing the quality of life in the human settlements of the region. This would make the region more appealing for its population to continue living there and naturally increase, rather than migrating to other regions. Eventually, with such incentives being provided in the region, it is argued that it will become attractive for people in the Nile Valley, to move there for a better life while releasing some pressure away from their origin region.

1-1 Egypt's country profile

It is important at the very beginning to familiarize the reader with the Egyptian context to ensure a better understanding of both the flow of the research and the reasoning for its objectives and hypothesis. Thus a brief background on Egypt is given in this section, mainly discussing its geographical location, its administrative structure, and its population distribution on its territory and settlements. These are necessary basic elements to understand the problematic background that initiated the research within hand.

1-1-1 Location and area

Egypt is located in North-East Africa and includes the Sinai Peninsula that is often considered part of Asia. Its natural boundaries consist of more than 2,900 kilometers of coastline along the Mediterranean Sea, the Gulf of Suez, the Gulf of Aquba, and the Red Sea. Bordering the Mediterranean Sea, between Libya and the Gaza Strip, Egypt has land boundaries with Palestine, Libya, and Sudan.

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[1] Of course there are other famous ancient civilizations e.g. the Babylonians, Phoenicians, Assyrians and Greeks.

The country's greatest distance from north to south is 1,024 kilometers, and from east to west, 1,240 kilometers,[2] with a total area of approximately one million sq km that is characterized by a vast desert plateau interrupted by Nile valley and delta.

The Sinai Peninsula is the only land bridge between Africa and Asia; while the Suez cannel that divides the Egyptian mainland and Sinai is the shortest sea link between the Indian Ocean and Mediterranean Sea.

Despite that Egypt has an area of one million square Km; most of its population resides by the Nile Valley and few other locations, on only 5% of the total area of the country. The population distribution and the population movement trends are illustrated briefly in the following section, which in turn helps in understanding the population growth problems and their implications on the development process.

Fig.1-1: Profile of Egypt
Source: www.map-of-egypt.org , June 2007

1-1-2 Population trends

The Egyptian population witnessed massive increase in the last century, specially when it doubled in the last 25 years. Being 35 million inhabitants in the 1970s, Egypt is now inhabited by approximately 76 million inhabitants[3], mainly living in the Nile valley and few settlements in the rest of the country, while the rest is desert.

The population density is also uneven, in which most of the urban population (43% of the total population) reside in the two major urban centers, Cairo (12 millions) and Alexandria (3 millions), while the rest is distributed among the other 211 urban centers, which are mostly concentrated in the Nile Valley (GOPP[4], 1999).
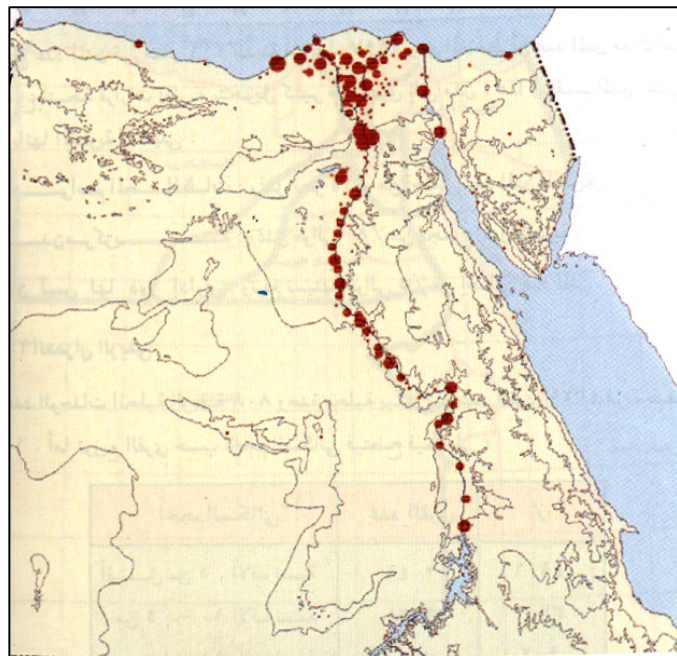
Fig.1-2 Population distribution in Egypt
Source: GOPP (1998)

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[2] http://www.odci.gov/cia/publications/factbook/ , April 2002
[3] Population Census of 2006
[4] GOPP stands for the General Organization for physical planning, which is almost the sole organization for national and regional planning in Egypt.

This reflects the imbalanced distribution of population densities, among the Egyptian urban settlements, as illustrated in figure (1-2).

Population migration trends

The general picture for the population movement as pointed out by GOPP (1998), shows that the so called urban governorates (composed only of urban population) that are Cairo, Alexandria, Suez and Port Said; have an in-migration rate of (+2.167%), mainly because of the concentration of the administrative, production and service sectors.

For the Delta and the southern Egyptian governorates, they are mostly witnessing a process of out-migration except for few governorates, i.e. Giza, Ismailia and Qualyubia. As for the so called frontier governorates (those bordering other countries) i.e. New valley (composes the major part of the case study region), Red sea, North and South Sinai, are currently witnessing an in-migration movement though in small percentages.

Fig 1-3: Population movement in the 1990s
Source: Merdan (1999)

GOPP (2003) elaborates more on migration towards large cities like Cairo and Alexandria as they mention that the reasons for this migration include:

- The attraction of the city life where people hope to find better living standards than those in there origins;
- the poor state of services and public utilities in rural governorates;
- The fragmentation of agricultural land due to small ownerships (in terms of area) that do not provide enough revenue for families.

Consequently, with the continuous population growth and movement, several implications were/ are generated, forming several problems that accumulated over the years.

1-2 Problematic background: *population and urban growth implications*

The implications and problems generated from the population trends do not only include the typical problems of high levels of pollution, traffic congestions, etc, but also include several other problems that are quite unique to the Egyptian context.

These problems are identified by most of the Egyptian academics; professionals and government personals. Three of these problems are discussed as follows.

1-2-1 Settlements expansion on agricultural lands

Through the last few decades, the problem of the agricultural land run accentuated, where the annual reduction of these lands caused by the expansion of the cities and villages of the Nile Valley and Delta reaches 50 to 70 thousand feddans[5] per year (GOPP,1999).

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[5] A Feddan is an Egyptian measuring unit for land area, where 1Feddan = 4200 M²

This factor directly threatens Egypt's food supply, a problem that is taking place in an increasing pace, and is being continuously tackled by different government policies, since the early 1960s (Fig. 1-4).

Fig 1-4: Settlements expansion on the expense of arable lands in the Nile Valley

1-2-2 High population densities in urban centers

The concentration of the Egyptian population on only 5% of the country's area and the continuous rural to urban migration, led to high population densities in the urban and rural settlements especially within urban centers. This situation causes negative implications in terms of the availability of sufficient housing, adequate infrastructures and the quality of services.

These factors eventually lead to the rapid expansion of urban centers, and even villages, on arable lands, while causing several problems in the built

Fig 1-5: A view of the pyramids blocked by a jungle of buildings from Giza

up areas. This is evident for example in the spread of slum areas, the deterioration of services and infrastructures, social problems and other complications (GOPP, 1999).

1-2-3 Inequality and imbalance in investments

Merdan (1999) argues that as big cities attract investments they also attract population and labor force; this concentration may have a negative effect on the development of other areas and tends to have a high consumption rate, as compared with production rate. This is very true in the Egyptian context which leads to inequality in terms of service provision, investments, job opportunities, and poor life quality.

Hence, when discussing the concept of *equity* among the different Egyptian regions, which is directly, reflected on the quality of life that citizens experience from one region to the other, it turns questionable. For example, in terms of investments for economic development, most of them go to areas of preference, with almost 40% of the development investments going to Cairo. It is clear that there is an imbalance concerning investment distribution, and consequently in the services and jobs provided in different regions.

Accordingly, the issue of equity concerns the even or just distribution of opportunities, resources, quality of life, investment and economic development.

These implications, which were accumulated through several decades, stimulated the need for national and regional development polices with the main aim since the late 1990s is to expand the populated area of Egypt to 25% of its area, as explained by GOPP (1998).

However, this is not a new intervention, since several regional development attempts were launched by the state as early as the 1960s, when the first attempt for developing the desert areas was made. This was followed by the regional development policy in the 1970s that aimed to redistribute the population over all the country's area, and was known as the "New Map for Egypt", that were followed by development plans for the Egyptian regions through the 1980s -1990s. These attempts however did not achieve much of their objectives as discussed later in this research; in fact one of the regions that witnessed successive attempts for regional development is the western part of Egypt in the Western Egyptian Desert, which is selected as the case study region for this thesis.

1-3 The Western Part of Egypt

This region is one of the examples for the different regional development attempts that took place in Egypt; yet, this is not the only reason why it was chosen to be the case study region. There are multiple academic and personal motives/reasons for its selection; which are explained after giving a brief overview of it.

1-3-1 The Western desert oases

The case study area consists of five groups of settlements; Bahareya, Frafra, Kharga, Dakhla and Baris, each group is composed of a hierarchy of settlements with a capital city on the top and large and small villages categorized according to the type of services they provide and the size of their population. These are located to the West of the Nile Valley (mainly in the South-West of Egypt) in the so called Western Desert of Egypt, which is part of the Sahara desert. They are commonly known in Egypt as the Western Desert Oases, as in principle they are oases, which up till

Fig 1-6: The settlements of the case study region.

the 1960s were mainly rural settlements in the desert. However, with the early development attempts in the 1960s, the largest settlement in each group was upgraded into its capital.
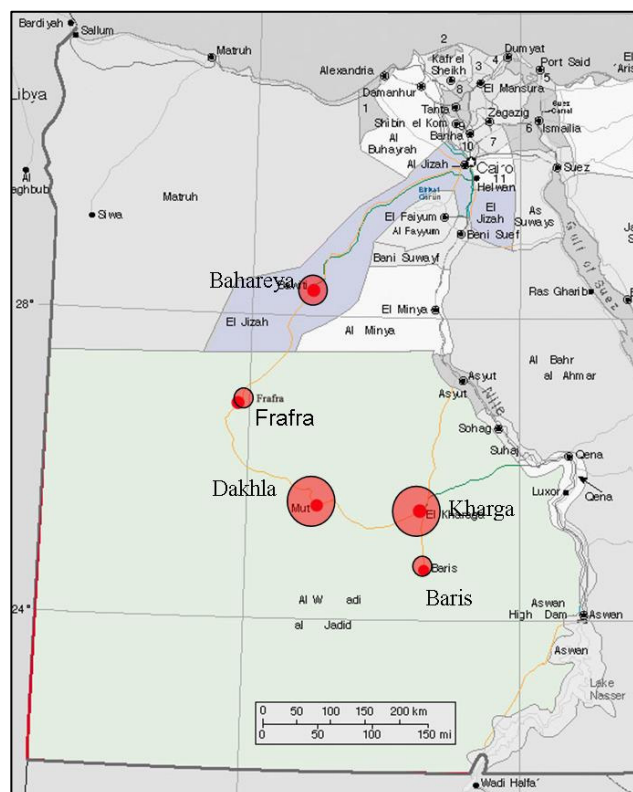
These settlements are inhabited by 240000 people distributed over the five groups of settlements, with the smallest group being Baris of about 10000 inhabitants and the largest is Dakhla with almost 94000 inhabitants[6].

Contrary to the common image about the oases shared by the majority of the Egyptian population living in the Nile valley, myself included, until visiting the region for the first time in 2000, the oases are not a group of tents for nomads living next to palm trees and relocating with the purpose of finding water with their camels. The oases are groups of settlements that include both rural and urban settlements with some features similar to those found in the Nile Valley.

Fig 1-7: The center of Kharga city with its road network

1-3-2 Why the Western Part of Egypt?

Before explaining how the research theme, hypothesis and objectives were formulated, it is important to explain briefly why this region was chosen for the case study, hence the motives for this research:

- The western part of Egypt had witnessed successive regional development attempts over the past 40 years with varying degrees of success and failure. Until present day, this region is considered a hot and controversial issue within the development attempts pursued not only by the Egyptian government, but also by Egyptian scientists, academics and planners. They consider the development of this region an important part of the solution to the Egyptian problem of population concentration in the Nile Valley and Delta. This is based on the estimates of the carrying capacity in which this region can take, in the mid 1960s the estimates were up to four million inhabitants, as discussed in chapter six, but were re-estimated to 1.3 million people by GOPP (1998) based on recent indicators. From the above, it seems that the main objective for developing this region is to resolve a national problem, which is the concentration in the Nile Valley. This stimulated the desire to carry out a study that focuses on the development of the region for its own sake, which will possibly have also positive effects on the national level. Thus, *the main interest of the thesis is focused on the region to make it better through an appropriate development approach, based on its own assets, and the spatial qualities of its human settlements, and not just as a mean to solve the problems of the Nile Valley.*

- In 1997 the state propaganda focusing on the Toshka Project was in its peak. This project aimed to dig a canal from the Nile to the South of the Western desert in order to establish new communities at Toshka to the west of Aswan in the South of Egypt, and to the South of the study region. At that time guest lecturers were invited to present this project in my university where they also referred to the previous development attempts that took place in the Western desert of Egypt, thus, increasing the attention towards it.

- Finally in 2000 and 2001 I was involved in two research expeditions to the region, as a research assistant, to investigate existing potentialities that could be used in setting a development scheme. Overwhelming characteristics of this region were experienced by the expeditions, which realized the existence of several interesting potentialities that are somehow neglected. These investigations gave a sufficient background on the study region

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[6] Data obtained from the New Valley Governorate database, population estimations in 2006.

and established a sense of familiarity with it and with its earlier development attempts that did not fulfill their aims, hence, raising the question if there is another approach for development that could be applied there[7].

Because of these motives the Western Part of Egypt was selected as the case study region for this research.

1-4 Developing a research hypothesis

To formulate a proper research hypothesis, several steps were taken, some of which even started before my decision to conduct this study. The beginning of the process, started with my first academic exposure to regional networking and networks between cities within a specific region. Then through contrasting this exposure against the critical situation of population distribution in Egypt and the unsuccessful attempts of regional development within its regions, together with some initial preparation, a research hypothesis was developed.

Academic exposure
My first interaction with regional networking and networks took place while studying for the Master of Architecture in Human Settlements in Leuven in 2001/02, when it was introduced and discussed during the planning courses of that program.

Some examples were also illustrated during these courses starting from the concept of the "European grape", which illustrated a vision of polycentric urban regions and regional networks through Europe (Kunzmann & Wegener, 1991), passing through the "Flemish Diamond" case in Belgium, which was classified as a network in the making (Albrechts, 1998 &2001 and Van den Broeck, 2003), the "Randstad" in the Netherlands (Faludi, 1998 and Van der Burg, 2000) and the regional cooperation in the Benelux (Benelux, 1996).

Hence, my first understanding of a regional network was that it is based mainly on the idea of cities (and settlements in general) complementing each other and cooperating together in an interdependent horizontal way, hence strengthening the process of regional development and achieving a better quality of life .

The idea for the thesis
Having understood the possible input of regional networking and networks on regional development; while knowing that the Western Part of Egypt went through several regional development attempts that only fulfilled few of their aims, the idea of investigating the application of networking and networks as a possible alternative approach for regional development in the Western part of Egypt came into consideration.

 It is important at this point to hint for the possible confusion arising from the use of the terms networking and networks, since the normative meaning of networking refers to an interactive action between specific actors, while that of networks can refer to configurations of human interaction, from viewpoint of social science. Through the thesis networking refers to this human interaction, while the term network is used not only in its normative form but also to describe configurations of physical and functional interactions.

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[7] Having gone to these expeditions, I started to admire the region, its nature and its people, an admiration that made me decide to go back again to learn from its people and culture, hence I decided to combine it with a future research that later became this PhD. At the same time being originally from Cairo and having done a Master thesis about Cairo, made me think of a different research topic to deal with low population densities in contrast to the booming Cairo, which has been a topic for hundreds of scientific researches, hence, another research about the city would be considered as one among many, contrary to a research on regional development for the human settlements of the Western Desert that will be considered one of few and with further specialization of investigating the use of networking as a tool to achieve this development, will be considered the first in Egypt.

It is important to stress that the idea of networks clearly exists in the applied sciences, e.g. in civil engineering, for example: road networks, railway networks, waterway networks, also in informatics and telecommunications, etc.

At the same time, networking and networks exist in several locations of the developed world, while the concept of regional cooperation exists within some developing regions and low populated regions. For example the Mekong region between Thailand, Laos and Vietnam and Cambodia, which formed an intergovernmental body charged to promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well being (MRC[8], 2007). Another example could be found in the Big Sur region in California, which is a sparsely populated region that, owing to the presence of natural landscapes across the region, almost totally relies on tourism on a full regional level[9].

It should be taken into consideration that within networking and networks, power structures governing the social interactions within their actors are reflected in hierarchical settings within the networks. This means that in real life the concept of absolute horizontal settings of the networks seldom exist. This raises concerns on the legitimacy of the networks, in terms of the inclusion of all related actors in the visioning and decision making process, while having equal voices. Therefore, in order to ensure this legitimacy, the networks could be monitored by hierarchical governmental bodies, only to the extent of ensuring democracy within them.

However, to apply regional networking and networks as a tool for regional development and cooperation in *remote peripheral desert region*s in *developing countries* is not quiet usual and even contested by some scholars, e.g. Castells (2003). He argues that such application is difficult within developing countries since they lack the necessary technological competencies to support such application. Therefore the challenge in this thesis is to test whether it is possible to apply regional networking and networks in the case study region, which lacks many of the elements stressed by Castells.

Initial preparation

In order to set a proper hypothesis to the thesis, sufficient preparation had to be done, in terms of building a sufficient background regarding the main aspects to be tackled, which are roughly identified as regional development approaches, networking and networks and the Western part of Egypt as a case study, this was done through the following:

- *On Regional development,* a special module on regional development in the University of Newcastle upon Tyne in 2003 was attended. The module was called " European module for spatial planning and development" where it dealt with several aspects of spatial planning and regional development identifying the links between them, this of course was accompanied by extensive readings on regional development.
- *On Regional networking and networks,* extensive reading and literature review were made to understand the different settings, and theories of networking. There was also the attendance of several events on networking such as the 3rd joint congress of ACSP-AESOP with the theme "The Network Society: The new concept for planning" in 2003, the lectures of Manuel Castells in 2004 in Leuven and other related lectures.
- *On the Case-study Region,* extensive reading and literature review were made to get hold of the history and settings of the region and the relevant development attempts that took place there. In addition two field trips were made in 2003 to understand these settings.

Finally the research proposal was developed on the above basis, and was modified several times according to further additional knowledge gained through the research process.

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[8] http://www.mrcmekong.org , August 2007.
[9] http://en.wikipedia.org/wiki/Big_Sur , August 2007.

1-5 Research hypothesis

Because of the fact that 95% of the Egyptians are concentrated in the Nile Valley, which is causing sever implications as discussed earlier; several development attempts were carried out in other regions in Egypt. Most of these attempts had their end goal being the deconcentration of population from the Nile Valley by relocating millions to other Egyptian regions e.g. Sinai, the North West Coast and the New Valley[10].

However, these attempts were not fully successful in realizing their objectives for several reasons, to mention a few: the poor capacities in development management, lack of resources to maintain momentum within the development projects, change of political agendas, exclusion of important actors from the development process, interruption of the development attempts by wars, and the poor results of the state led top-down programs (Attia, 1999; Nabawy, 2002). Eventually, the regional development attempts succeeded in increasing the built up areas of Egypt, but failed to induce mass migrations to these areas (Attia, 1999).

Among the regions that underwent such development attempts, was the case study region which also included the so called New Valley Governorate (province). This region witnessed some success at the first five years of its targeted development program; however, it came to a dramatic halt as an indirect outcome of the six days war of 1967 (Mahdy, 1979).

As such, the current relationship among Egyptian regions is better described as a core-periphery one (Friedmann, 1966) in which Cairo and Alexandria are the main core national centers, with the rest of the cities in the Nile Valley being secondary sub centers, while other regions are considered the periphery, including the Western part of Egypt.

The development attempts have recommenced since the 1970s, the actual development projects that were implemented in these regions, with their main objective being to stimulate mass population relocation to them from the Nile Valley. However, they failed to tackle the peripheral regions as whole units, instead these projects targeted specific settlements and sectors within these regions, regardless the broader regional situation.

This was clear in the 1998 development map of Egypt (GOPP, 1998) in which development priorities were given to the different regions according to the assets and potentials that they posses. However, in many cases such as the Western part of Egypt, the regions were not assessed with their collective assets; rather they were assessed according to the potentialities of their individual settlements. Accordingly many were considered of low development priorities from the state's point of view (Abdel Moety, 2002), thus maintaining the status quo of being peripheral regions, which receive less attention from the state as compared to the Nile Valley.

It is argued that regional development should build on the existing regional assets in a collective and integrated way; these assets include several clusters, as discussed by (Friedmann, 2006), mainly human, social, cultural, intellectual, natural, environmental, urban assets and above all its spatial assets. Accordingly, regional development visions, strategies and plans should be based on the collaboration and cooperation between the different actors and organizations involved in the development and planning process (Healey, 1997) to capitalize on the region's own assets. This is argued a necessity to the development of the peripheral regions in Egypt including its western part. Through such process, regional development visions and strategies could be set with the main aim of improving the quality of life in these regions, while alleviating regional inequalities in such a way to keep the people living there instead of migrating to another region.

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[10] The New Valley is the South-West Province of Egypt which includes four groups of settlements out of the five groups in the case study region; these are Frafra, Kharga, Dakhla and Baris. It is also the largest province in Egypt making roughly 44% of the country's area.

Besides, with sufficient incentives provided, the region can become an attractive region for people from the Nile Valley to move there seeking better opportunities and better quality of life. This can be done by creating employment opportunities, enhancing the quality of services and raising the living standards in these regions.

Focusing on the Western part of Egypt as an example of Egyptian peripheral regions, it is argued that actors in this region could realize their common development interests and objectives through collaboration and cooperation, which can be done with the help of networking and the creation of networks. This networking between actors is culminated in the establishment of networks to realize their set development visions and objectives. It is postulated that such regional networks are composed of three different types of networks juxtaposed together in the same space as they depend on the spatial assets (as well as other assets) of the region, therefore causing spatial impacts on the regional and human settlements' levels; these networks are: actor networks which manage and organize the functional networks that are based on the different sectors of activities, and are all supported by the physical networks of communication and transportation. As such, it is postulated that regional networking and networks could be considered as a tool for regional development based on local assets that could be applied in the Western part of Egypt.

1-6 Research questions

Several research questions are posed based on the above research hypothesis, with the main question to be addressed is:

Can regional networking and networks be applied to the Western Part of Egypt, which is a remote peripheral region, as a tool for regional development and planning?

This question is broken down into sub research questions, categorized into theoretical questions dealing with regional networking and networks and contextual questions about their application in Egypt.

1-6-1Theoretical questions

The Questions concerning regional networking and networking, addressed in this research are:

- What are networking and networks? And how are they related to space?

- What are the different regional development approaches and strategies to alleviate regional inequalities?

- How can the regional clusters of assets and in particular, the spatial assets, e.g. the quality of human settlements, architectural quality and historical and cultural heritage, which represent the autonomy of the regional spatial quality, be invested in the process of regional development? And can this be done through networking?

- What are the elements that form networks? And what are the different levels of networks?

- What are the different types of networks that compose a regional network? And how are they related and contained in space?

- What are the conditions and success factors for networking between actors for collaboration and cooperation?

- What are the effects of regional networking and networks on regional development? And can they form a possible strategy to achieve such development?

- What are the spatial impacts that can result if networks are applied in a certain region?

- How were regional networking and networks applied in different contexts? And what were the aims and the objectives of these applications?

- Can regional networking and networks be applied in developing countries to achieve regional development?

1-6-2 Contextual questions

The contextual questions tackle the possibility of applying regional networking and networks in the Egyptian case study region; therefore the questions tackle general aspects related to the Egyptian context and more specific questions to the regional context.

Egyptian context

- What are the regional development strategies that were previously applied in Egypt? And what were their outcome and the reasons for their outcomes?

- How did the previous regional development attempts transform the national landscape?

- How was the regional planning process carried out in Egypt? And what were the drawbacks of this process that caused ill results of the previous regional development attempts?

- How was the Egyptian planning system changed recently? And what are the main features of this shift and their causes?

- How can networking be carried out through a traditional centralized system that is gradually being transformed? And can it contribute to further transformation of the system?

Regional context

- What were the previous regional development attempts that were applied in the Western part of Egypt? What were their impacts on the spatial transformation of the region? And what are the lessons to be learned from them?

- What are the regional clusters of endogenous and spatial assets that exist in this region on which the development attempts can be based?

- Are there any existing spatial and functional relationships between the cities of the region that can be developed into regional networks?

- Who are the related actors in the region that could engage in networking for regional development? Is there any cooperation taking place between them?

- Is it possible to suggest the application of regional networking and networks within this region? Are there any success factors for their application existing in this region? And how can the missing factors get substantiated?

- What is the proper strategy to use regional networking and networks in this region as a tool for regional development?

- If regional networking and networks are applied in this region, what are the possible key projects that could be formulated and implemented physically and spatially to realize the proposed regional networks?

- Accordingly, what are the possible spatial impacts that might take place because of this application?

Consequently, through addressing these questions, an adequate strategy for applying regional networking and networks to achieve regional development in this region could be reached, after identifying the necessary conditions and success factors needed for them.

1-7 Research methodology

In order to address these questions a proper research methodology is used mainly relying on literature review, theory formation and the case study approaches together with different supporting methods, these are discussed as follows:

1-7-1 Studying and understanding the theories of regional development and networking and networks

Theoretical background on regional development and networking and networks is of a major importance to this thesis as it gives the base upon which the arguments of the research are discussed; many of its aspects are later tested in the study region.

1- Developing a theoretical framework through literature

In order to conduct this research and to test its hypotheses, a proper theoretical background had to be built, for both regional development and networking and networks. The former is important in understanding the need for the later, and also important in providing a background framework through which regional development attempts in Egypt and the case study region are to be studied and analyzed later. To achieve such a background, an extensive literature review was done on the aspects discussed above, which included several books, scientific articles, websites and lectures.

For regional development

The literature review that was done, included several books and articles including those of Myrdal, Hirschman, Massey, Potter, Kunzmann, Friedmann, Moulaert and Mehmoud, focused on the following aspects:

- Classical regional development theories e.g. polarization theory, core and periphery theory and Growth pole theories
- Regional inequalities and their reasons.
- Regional urban development strategies, e.g. concentration and deconcetration spatial development strategies
- The differences between the top-down and the bottom-up approaches, and the concepts of another development.
- The territorial innovation models and regional development.
- The role of the state and the power relations governing the development process.
- The concept of new regionalism.

For regional networking and networks

Several resources and references on networking and the network society were reviewed including books and articles by authors like Castells, Albrechts, Mitchell, Healey, Moulaert and Cabaret, and Graham, these addressed the following aspects:

- The meaning of networking and networks
- The relationships and differences between networking and networks
- The normative and real life views of networking

- The different levels and types of networks
- The success factors and conditions for regional networking
- The network analysis and the power relations of their actors
- The effects of networking and networks on Regional development.
- The spatial impacts of regional networks, which were not explicitly covered by literature since most of it comes from social science disciplines, however, proper effort was made to investigate such impacts depending on the available resources.

Having done that, a definition for networking and networks to be used within this thesis was formulated together with a framework showing how the different types of networks forming a regional network can exist in space. These aspects were then further addressed through studying different cases in different contexts.

2 Understanding networking and networks through international cases

In order to reach a further understanding of the theories of networking and networks, it was important to revert to some examples or cases from the world through which the aspects of networking and networks could be analyzed in order to later use such aspects in testing the research hypothesis in the case study region. The cases studied are those of the Bothnian arc in Northern Europe between Sweden and Finland as an example of a network in the making, the Randstad in the Netherlands as an example of a functioning network within a polycentric urban region and the Pearl River Delta in China, for being a state guided regional network on a large scale.

1-7-2 Studying and understanding the Egyptian context

In order to build the rational for using networking and to have an understanding on the national and regional settings, the theoretical background achieved from literature is used as a framework to analyze and review the previous Egyptian regional development attempts in general and those of the study region in particular.

1- Analyzing the Egyptian regional development attempts

In doing so, *literature review* was made related to regional development attempts that took place over the last four decades. These attempts were documented in different sources including:
- Academic research papers and theses, such as those of Attia (1999) and Merdan (1999),
- Official documents, which included several publications by the General Organization for Physical Planning (GOPP) in Egypt, from the 1980s until present.
- Other related books about regional development in Egypt.

In order to substantiate the discussion with critical arguments, parts of the conducted *interviews,* discussed in detail in a later section, were dedicated to question some matters relevant to these attempts especially in relation to the case study region.
The same approach i.e. the use of literature reviews and interviews were used once more to critically analyze the regional planning process in the traditional Egyptian system.
Accordingly, the following aspects were addressed:
- The previous regional development attempts that took place in Egypt and the case study region
- The causes for the partial failures of the successive Egyptian policies
- The Egyptian planning system and the regional planning process through which these policies were formulated.
- The slow but gradual shift that is taking place within the Egyptian planning system.

2- Practical involvement in a contemporary project

A *practical involvement* in one of the phases of the Municipal Initiatives for Strategic Recovery (MISR) program with the UNDP in December 2006, in which setting provincial plans was made is used as an example to illustrate how the Egyptian planning system is being transformed into a decentralized system. This is studied to understand the transforming settings of the (regional) planning process in which networking is to be applied.

1-7-3 Questioning and testing the hypothesis through a case study in the Western Part of Egypt

The case study of this research is the Western part of Egypt. In order to conduct the research work for the case study several methods were used in order to give a concise outcome, these included:

- *Field studies,* on which the research relied heavily at certain parts, thus five visits to the region took place. Practically three of them took place within the course of the study, twice in 2003 and once in 2006 which are considered the "*in depth field trips*", yet the initial two trips in 2000 and 2001 (before the start of the research) are considered the *reconnaissance trips* to the region, which provided background information and established the case of a possible research project.

During these field trips, several techniques of inquiries were used, including *on site documentation* e.g. the case of the migrant farmers to the region from the Nile Valley, discussed in chapter six, and also *experiencing the reality* of the relationships in the region through practically living it. This was evident when I traveled to the region using public transportation and following the same route as other visitors to the region take, such an experience defined many sections in chapter eight.

- ***Interviews,*** were used to justify and substantiate many arguments related to the Egyptian context and the proposal of applying networking and networks to the study region. The interviews took place in both Cairo and the study region, where the interviewees were composed of academics, consultants, GOPP officials, city Mayors, city officials, locals and migrant farmers to the region, in that sense, the interviews were open ended and of a "face to face" nature. The reasons for using such a technique were: First to learn from the experiences of the interviewees mainly those who were involved either professionally or academically with the earlier development attempts in the study region on one hand and on their involvement in the regional planning process in Egypt on the other hand. Second to know their reactions on the idea of using regional networking in the study region and the possible networks of cooperation that could exist[11]. And third to know the views of local officials on the previous development attempts and the ongoing development attempts that are taking place in the region

- ***SWOT analysis*** and ***actor analysis***, were carried out based on the data collected through literature review on the case study region and through the field visits. They are used mainly in chapter eight, where the relationships and the activities abundant in the region were studied together with the endogenous assets and potentialities for development.

This was done to point out the possible functional networks that could be suggested in the region, and to decide what strategic interventions should be made, based on the strengths,

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[11] The selection of the interviewees and the forms used for the interviews are added to the appendix.

weaknesses, opportunities and strengths of the region and the analysis of the related actors, by knowing their interests, powers, and visions for interventions; this is done in chapter nine.

- *Satellite images*, which are mainly considered a source of information, were used to study the spatial dimensions of the region, in order to give a true reflection of reality, and further substantiation of some arguments[12].

In general, the following aspects were addressed:
- The spatial and regional assets and the potentialities of the region
- Existing functional relationships between the cities of the region
- Relationships between the involved actors in the region
- The existing and missing conditions and success factors for networking in the case study region.

To summarize the rational of the methodology: a brief overview on regional development theories was made in-order to situate and reason for the use of networking and networks in regional development, thus establishing a proper theoretical background and framework. This would later act as an analytical reference when discussing the previous regional development attempts in Egypt and the study region, and the different examples on regional networks. Using this theoretical background and framework the hypothesis of using networking and networks in the Western part of Egypt is tested through the case study part, and ending up with conclusions.

1-8 Research limitations

It is important at the beginning of the thesis to mention some limitations that faced the research process. These are discussed as follows.

1- Not a conventional region

The notion of the region tackled in this research is different from the typical idea of region especially European regions, in terms of scale and population. This is seen from the regions discussed in this thesis, in which many are European polycentric urban regions with a significant population and of industrial and post industrial nature. They hardly share any similarities with the study region which is desert and under populated, in other words, it is not an "evident region". Simply because similar regions (to the case study) in which the concepts of networking and networks are applied were not available for this study.

2- Possible misjudgments on the development potentialities of the region

In the case within hand, some people might initially develop the impression that there are no evident development potentialities for that region, since it is not an "evident region". However, they might be mistaken in the sense that there are certain fragmented potentials that could be linked together and used in regional development. At the same time, there is a possibility that the objective of this research, which is attempting to realize a vision of a willed future for the region, may not be realized, because of its vagueness, and unique case of being a peripheral desert region. However, there is also a possibility that the attempts carried out to identify development potentialities and use them through a process of networking and establishing networks to achieve regional development might turn fruitful.

The research aims to investigate the fragments of potentialities that might influence regional development in the study region, accordingly investigating and analyzing the potentials that are there , including those which are not quite evident, and trying to link them together while mobilizing the involved actors to engage them in a process of networking through which they

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[12] The majority of satellite images were clipped from the online resource of Google earth.

can formulate/establish a comprehensive regional development vision, while taking into consideration the voluntaristic measures needed for this process.

3- Only one peripheral region was tackled

Due to limitations in both time and resources, only one peripheral region was examined for the possible application of networking and networks as a tool for regional development. This is the main reason for downsizing the scope of this research to focus only on the Western part of Egypt, hence, further generalization of the application of networking and networks to peripheral regions in developing countries could not be done.

4- Strong emphasis on the functional approach

Through the case study part of the research and ending with the proposal on applying regional networking and networks in the study region a relatively functional approach was taken.

The research did not tackle in depth the more cultural and social aspects of the region in question, only referring to such aspects that influence networking between actors.

Unfortunately these could not be investigated as a possibility for establishing regional cultural networks. Perhaps the main reason for this shortcoming is the lack of sufficient relevant information, but only relying on observations during the field trips,

Further more, the available publications on the social aspects of the study region tackled superficial social relationships and cultural aspects, mainly focusing on social behavior in events like marriage or death, and very limited aspects related to cultural anthropology.

Besides, because of time and capacity limitations, it was difficult to investigate these aspects within the set timeline of the research.

5- Limitations of the conducted interviews

As mentioned earlier, through some chapters of this thesis there is a strong reliance on interviews carried out among a certain number of academics, professionals and officials. However, the opinions of the interviewees could not be contrasted against each other, only through the analysis carried out later in the research. It would have been better to use for instance the Delphi method in which the outcome of the interviews could have been forwarded among the interviewees to contrast their opinions against each other. But because of financial and time limitations this method was not applied in this research.

6- Limited resources on the relationship between networks and space

As already mentioned, most of the literature on networking and networks comes from the social science domains, which made it difficult to analyze and investigate the spatial dimensions of networking and networks viewed in this thesis. Nevertheless, substantial attempts are made through this research to highlight the spatial impacts of applying networking, both theoretically and when tackling the Egyptian context. However, these attempts remain limited and require further investigation.

7- Consistency of official reports

The lack of consistency of some of the official reports is considered more of an obstacle than a limitation faced in this thesis. In some of the official provincial and local documents, the emphasis is strictly made on the achievements and the accomplishments of the cabinet of the current governor, with only little information on regional development problems.

In order to overcome this situation, further interviews were carried out with some personals in the different cities of the region to get hold of the actual problems, rather than the biased information illustrated in the official reports.

1-9 Thesis structure

The thesis consists of three parts: A theoretical background, the Egyptian context, and the case study part; these parts are then followed by a general conclusion; this is illustrated schematically in the following diagram:
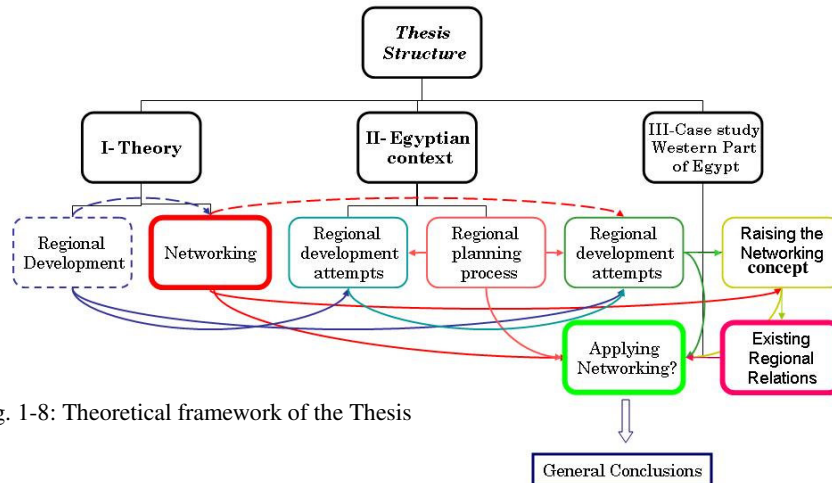
Fig. 1-8: Theoretical framework of the Thesis

I- Theoretical background
The theoretical background consists of two chapters; chapter two: Regional development, theories and approaches and chapter three: Networking and networks in space.

- ***Chapter Two: Regional development theories and approaches***; the main purposes of this brief chapter is to establish a theoretical background within which previous regional development attempts in Egypt and the study region could be later analyzed and critically situated within this framework. Also to make an introduction to situate networking and networks within the field of regional development.

- ***Chapter Three: Networking and networks in space***; where the main purpose of this chapter is to understand the elements and types of networks, the success factors of networking and the benefits for their use in regional development, and to establish a framework for applying networking and networks that would be examined in the case study region.

II- The Egyptian context
This part is composed of two chapters, chapter four on the regional development attempts in Egypt and chapter five on the regional planning process in Egypt.

- ***Chapter Four: Regional development interventions in Egypt,*** is geared to give a critical evaluation and overview on the previous regional development strategies and their impacts on the spatial transformation of the Egyptian landscape and built environment. It also aims to understand the trends and contemporary ideologies of intervention that governed these strategies. This, later, enables the understanding of the regional development attempts that took place in the case study region, which are discussed in chapter six.

- ***Chapter Five: Regional planning process in Egypt***, which looks at the traditional planning process in Egypt. Thus it explains the failures of the regional development attempts discussed in chapter four, which were formulated through this process. The chapter also aims to have a good perception of the current transformation in the

Egyptian system towards decentralization and its impact on (regional) planning, which affects the proposal for applying networking and networks in the case study region in part three.

III- The Case study
This part is actually the largest part of the thesis in which the hypothesis is tested and the main research question is answered, it consists of four chapters:

- *Chapter Six: Regional development interventions in the Western part of Egypt.* The purpose of this chapter is to give a background on the study region in terms of its former regional development attempts and their spatial impacts on the regional landscape. This is done while highlighting their reasons for success or failure to be taken into consideration when discussing the use of networking and networks as a tool for regional development in the region. It also reviews the example of a bottom up experience in developing human settlements in one part of the region that is the Frafra group of settlements, as it is of a relative importance to further development attempts.

- *Chapter Seven: Egyptian perception of using networking and networks in the Western part of Egypt*, The aim of this chapter is to test the reception of the idea within the academic and professional planning domains in Egypt. This is to see whether it is accepted or denied by them, it also tends to learn from their ideas and reflections in regards to the possibilities and mechanisms of implementing the idea in the study region.

- *Chapter Eight: Existing relationships, spatial potentials and assets in the study region,* the aim of this chapter is to investigate the existing relationships that could be strengthened and used to establish functional networks in the region. The chapter tends to identify the main spatial assets, opportunities, activities and actors while highlighting the relationships that govern them, and at the same time, examine which of the ideas proposed in the previous chapter could be possibly incorporated in the region.

- *Chapter Nine: A Scenario for networking and networks in the Western part of Egypt: An application to the case study region.* The scenario is based on the existing relationships discussed in chapter eight. Accordingly, possible networks in the region are suggested together with possible spatial key-projects to realize them. Suggestions to fulfill the missing links within the regional physical networks are made to support the proposed functional ones, and proposals to substantiate the missing conditions for networking and for the creation of actor networks are made. Consequently, the possible spatial impacts that might occur on the regional and human settlements levels are highlighted and analyzed.

The thesis is concluded in *chapter ten*, which gives a review on the conclusions and findings of the research, in regards to applying networking and networks as a tool for regional development and cooperation in the Western part of Egypt. It also highlights the different natures of such applications in contrast to other contexts of the international cases discussed in chapter three. The chapter then illustrates the added value and the research contribution in terms of theory and approaches regarding the application of regional networking and networks and the added value of the research to the Egyptian context in regards to its regional development policy and planning system.
Finally proposals for further research that are needed to fulfill the initiative study carried out through this thesis are suggested.

Part One

Theoretical Background

II- Regional Development Theories and Approaches

2-1 Introduction

The main aim of this research is to investigate the use of networking as a tool for regional development. Therefore it is necessary to have a proper background and a good understanding on regional development itself, before embarking to understand the theories related to regional networking and networks discussed in the next chapter.

As illustrated in chapter one, in relation to the structure of this thesis, the previous regional development attempts that were carried out in Egypt and the study region over the last four decades are discussed in chapters four and six respectively, therefore it is important to establish a theoretical background, to be used as a framework to critically analyze and situate these attempts.

Accordingly, through a comprehensive literature review, the trajectory of this chapter defines the meaning of a region; it then discusses the regional inequalities showing that they are among the main reasons to initiate regional development interventions. The different approaches, theories and strategies of regional development and their spatial patterns are discussed focusing on the center down approach, through which most of the Egyptian attempts of regional development were carried on and also on the bottom up approach and the concepts of another development and new regionalism, which the hypothesis of this thesis is situated within.

2-2 Defining a region

There are many approaches to define a region and indeed many classifications were discussed in several works giving an extensive literature on that, some of which are viewed in this section. However, for the purpose of this research it is not necessary to provide an in depth overview of these works, since the approaches discussed are used to define the case study region within the scope of this thesis.

For example the work of Corragio (1983) who defines regions from the scope of **political economy** as areas corresponding to relatively homogenous relationships between agents and elements or be certain of their attributes, e.g. areas with the same types of production and ethnic groups; thus territorial ambits of relationships and territorial areas that are homogenous are defined as regions. The work of Markusen (1983) stresses that regions cannot be spoken of abstractly, but always must be identified by the social relations that characterize them in a given instance, as such, their concrete historical context must be given.

There is also the (spatial) perception of a region from the point of view of **human geography**, for example the work of Fellmann et al (2005) presents three types of regions: The *formal region*, which is an area of essential uniformity in one or a limited combination of physical or cultural features, this type is the largest area over which a valid generalization of attribute uniformity may be made, such that what is stated for it holds true for the reminder; then there is the *functional (or nodal) region*, which is visualized as a spatial system whose parts are interdependent and operate as a dynamic and organizational entity, where the boundaries of such region change in response to there degree and extent of areal control and interaction change; and finally there is the *perceptual region,* which is less rigorously structured since it reflects feelings and images rather than objective data, it is more meaningful in the lives and actions of those who recognize it than other more abstract geographical regions.

Van Langenhove et al (2002) argue that the term "region" has different meanings to different people, since regions can be defined variously by: geography, economic interaction, institutional or governmental jurisdiction, or by social or cultural characteristics. These types of regions in fact vary in size in terms of the territories involved, they can be included within countries or they can include several countries, since regions cannot exist without having a physical reality; the territorial shaping of a region implies that regions require some kind of boundaries. Accordingly, they define regions from a **spatial administrative** point of view as territorially based subsystems of the international system; stemming from that definition they provide three main categories of regions:

- **A micro-region;** which is defined as a territorial area that is smaller than the state to which it belongs, but larger than a municipality, such as: provinces, e.g. Vlaams Brabant in Belgium, departments e.g. the French departments or even mega-cities e.g. Greater Cairo Region.
- **A cross-border region** is actually a special case of a micro-region, whereby the micro-region spreads across different states. Examples on this kind of regions are the Bothnian arc between Finland and Sweden and the Cascadian region at the western edge of the US-Canadian border.
- **A Macro-region**, sometimes called *international region*, refers to large territorial units comprising different states, in other words; a coherent area or territory composed of two or more states, for example the Pacific region and the EU regions e.g. North West Europe.

It is important to realize that some overlaps or conflicts can take place regarding the definition of a region, a homogenous geographic region for example does not necessary coincide with the administrative borders of its territory, a geographic region can be composed of more than one planning/ administrative region, hence, the definition of regions varies according to the point of reference.

In light of this brief review the case study region, which is the Western part of Egypt could be situated as follows: The region is composed of a province (the New Valley Province) together with the Bahareya group of settlements which is part of another province, therefore it is considered as a *micro region* that is part of a nation state, it includes parts of different administrative regions while at the same time being one homogenous geographical region, in terms of common topographic features, history, culture, language and nature, accordingly acknowledging the shared social relations through a historical context, thus it is considered a *formal region* as well.

These aspects are evident when studying the region in chapters six and eight, however, it should also be acknowledged that among the aims of this research is to investigate the proper approach in transforming this region into *a functional nodal region through a process of networking and establishing different regional networks within the same territory that capitalize on its different development assets and potentialities.*

2-3 Defining regional inequalities

One of the main reasons to conduct regional development programs is to decrease and ameliorate the prevailing regional inequalities and disparities within different regions. An extensive work had been carried out so far in identifying such inequalities and the attempts to alleviate them; this is reflected in literature through the work of Moulaert, Dunford, Lipietz and Holland who tried to identify the meaning of regional problems and how to confront them. A brief discussion on regional inequalities is presented to support the understanding of the problem tackled in this research.

The work of Massey (1979) is considered a classical contribution to this aspect, in which she states that there always had been regional inequalities that are related to historical processes. She reflects on the notion of inequality that can either refer to inequality in the degree of attractiveness of a particular area to the dominant form of economic activity or the inequality in terms of various indicators of social well being e.g. rate of unemployment, per capita income, out migration etc. She argues that the first is usually a cause of the second to occur.

For the Egyptian case study region, historically the region was not attractive enough for industries or post industrial activities to locate there; however, there had been several attempts by the central and provincial governments to stimulate the location of industries, though these met limited success. Because of this unattractiveness, the social well being of the regional population is passively affected. But it is not industrial activities that this region should rely on, as it possess several assets and potentials that sometimes might not be quite evident. These should stimulate other sectors of activities such as tourism, agriculture and education, which are already functioning in the region as seen in part three of this research.
The development potentialities that are related to these activities are in most cases fragmented; however, if they are to be linked together by enhancing the existing relationships among them, a possible regional development vision can be realized.

Simpson (1994) argues that in most countries actively stimulating development programs, at any one time there will always be areas of these countries which are less active than others because there is no national need to utilize their resources since they are not competitive in terms of returns on investment compared to others, this is seen in the case of China as discussed later. He adds that the rate of applying development is crucially important and its significance varies between political, social and economic components. For example, an economic shift to achieve the optimum mix in terms of the use of factors of production may take place rapidly, while the social or political response to that movement takes place slowly. The resulting mismatch can produce social distress and create a potential for political conflict. Wei (1999) confirms that regional inequalities is one of the major concerns facing governments as it may threaten national unity, social stability and cause political conflict.

Regional disparities do not only prevail in developing countries but also within large prosperous countries, of course the scale of these disparities is relative from one country to another, as what is considered a problem region according to the norms of one country, is considered a well-to-do region from the view point of another country.
Interesting examples on regional inequalities in large international entities are given from the EU and China.

2-3-1 Regional inequalities and the EU
The ESDP (1999) illustrates that in spite of the EU being one of the largest and economically strongest regions in the world; nevertheless, it shows serious economic imbalances that affect the realization of regionally balanced and sustainable spatial development.
Hall (1992) elaborates this statement by mentioning that in Europe there is a different kind of geography, a geography of stagnation and growth, *of have regions and have-not regions*.
At that time (i.e. the first half of the 1990s) the major urban agglomerations tended to have a central location within the EU; most of them were found within a linear megalopolitan zone, graphically known as the blue banana, which includes London, Brussels, Amsterdam, Cologne, Frankfurt, Munich and Milan (figure: 2-1).

Conversely, as this is the new European heartland, the major problem areas are all notably on Western Europe's periphery: they include much of midland and Northern England, much of Scotland, all of Ireland, the north eastern Netherlands, parts of southern and western France, southern Italy (Mezzogiorno) and all of Spain, Portugal and Greece[13].

The ESDP (1999) adds to this fact by mentioning that while the differences in economic powers between "prosperous" and "poor" regions are declining slightly, the regional disparities within most Member States are increasing.
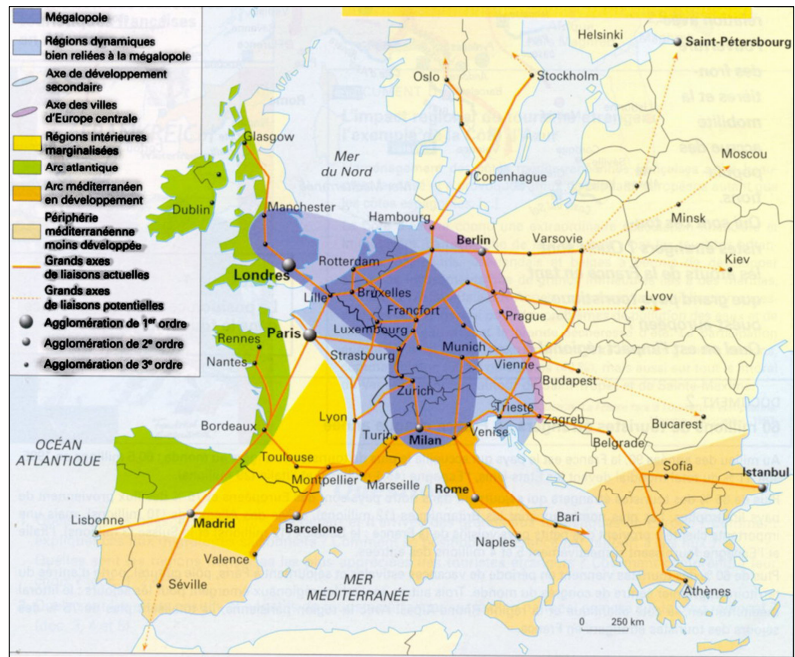
Fig.2-1: The Blue Banana
Source: RECLUS /Brunet (1989).

For example in the "more prosperous" Member States, there are often disparities between formerly prosperous regions with a declining industry, showing relatively weak economic dynamics, and those regions with steady economic growth, not to mention the situation in the less prosperous member states, with significant regional disparities between their urban regions that are witnessing growth, and the decline of their rural regions.

This situation is acknowledged and identified, even as far as the early 1990s, where Kunzmann and Wegener (1991) referred to this situation in their study for the urbanization and the function of cities in the European Community. They set a vision for the EU to change from the image of the "Blue Banana" into the image of the "European Grape", which is more suited to represent a polycentric structure of the urban system and the fundamental similarity of the interests and concerns of its cities. This was considered as a representation for the future that is based on cooperation and networking between cities in Europe.
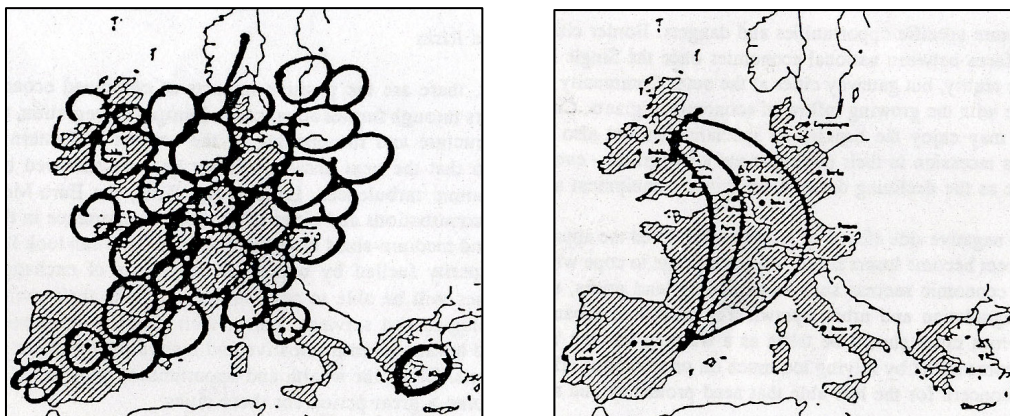
Fig.2-2: The European Grape opposed to the Blue Banana
N.B. the original illustration is not used here, to allow for the comparative display published by
Kunzmann & Wegener (1991)

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[13] It is important to mention that this report by the EC was written in 1999, i.e. before the expansion of the EU in 2004 and 2007; hence, there is now a different picture with the new 12 countries that joined the union.

Accordingly, in order to improve these inequalities and promote a balanced situation within this region the EU adopted the ESDP (European Spatial Development Perspective) that is considered a major regional development policy which included the concept of a Polycentric Spatial Development within Europe, hence, adopting the idea of polycentricism expressed in the European Grape.

2-3-2 Regional inequalities in China

Wei (1999) reflects on the regional inequalities in China; he states that the problem spanned over several decades, where regional inequalities exist(ed) between the coastal regions and the inland regions of China.

In a research done by the International Institute for Applied Systems Analysis (IIASA) in 2005, this situation was tackled. The research explained that the coastal regions are urban-industrial centers, while the inland regions are widely considered as rural hinterland.

The research concludes that the "economic miracle" of the past two decades in china, was mainly generated by a small number of coastal provinces and special development zones in southern and eastern China, among which is the Pearl River Delta regional network that is discussed in the next chapter.
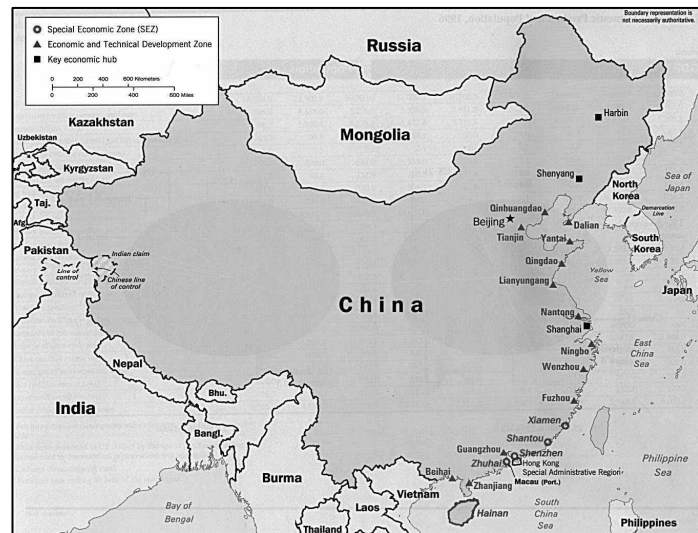
Fig.2-3: The imbalance of regional development in china
www.mitc.com , May 2007.

Because of these inequalities a large scale rural to urban migration is taking place, with rural farmers and unqualified workers relocating to the coastal regions and their urban centers, for better opportunities. At the same time the inlands of vast rural areas in the central and western parts of China have seen little economic growth after the first wave of development in the early 1980s, when family farming was reintroduced after decades of centrally planned agricultural communes[14].

Wei (1999) summarizes the reasons for these inequalities as; the legacy of history (meaning the perception of the inland regions through history as backwarded), an uneven geographic distribution of resources, an emphasis on industrialization and national defense, decentralization and policy changes, and political and social unrest.

According to Zhang et al (2005) since the opening of the Chinese economy in 1978, regional development attempts were mainly targeting the coastal provinces. They illustrate how these provinces were relatively advanced to inland provinces, therefore, they were granted the preferential policies first. Through these preferential policies, the coastal provinces not only received favorite fiscal and financial terms, but also were authorized more autonomy. Accordingly, these policies have promoted the richer provinces at the expense of poorer provinces, causing a development gap between them.

Wei (1999) argues that the gap between increasingly prosperous coastal provinces and stagnating interior regions has been widening in recent years, with great risks for the political stability of the nation. Eventually the Chinese government has acknowledged the seriousness

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[14] http://www.iiasa.ac.at/Research/SRD/back_china.htm , February 2005.

of this internal development gap and implemented a scheme of massive infrastructure investments and other measures to reduce disparities.

These examples illustrate that regional inequalities exist in different contexts in relative ways, the reasons for these inequalities vary according to the local contexts and history thus affecting the attractiveness of the regions for locating economic activities which in terms affects their social and economic well being, consequently these inequalities and disparities sparks regional development programs which attempt to alleviate them.

It is important to mention that the EU and China cannot be compared to Egyptian case study region in terms of scope and level, however, micro regions within these two entities could be in some cases comparable, e.g. southern Italy.

However, one should be very careful of looking at regional development only as an attempt to alleviate and overcome regional inequalities, which is rather a limited view; it can be considered as well as an attempt to maximize and enhance the assets of already strong prosperous regions aiming to sustain their development.

As mentioned earlier, regional inequalities exist in the Western part of Egypt in relation to the Nile Valley. These inequalities, which also exist in other parts of Egypt, stimulated several regional development attempts to ameliorate them spanning over the last four decades; these are discussed in chapters four and six.

However, in order to properly understand these attempts, the different regional development approaches are discussed to provide a frame of reference for the Egyptian attempts.

2-4 Regional Development

This section tackles mainly regional development concepts that are based on center-down and bottom-up approaches, the relevancy of the former stems from the fact that until very recent the majority of the regional development attempts that took place in Egypt were based on the center/top-down approach, while the relevancy of the later stems first from the importance of understanding the alternative approach of development and second that the system in Egypt has recently been shifting away from the former to the later approach. At the same time since networking is being proposed in this thesis as a tool for regional development and cooperation, it is important to understand these two approaches to situate networking in relation to them.

However, before reviewing these two approaches it is necessary to illustrate the meaning of regional development theories and strategies:

- *Development theories* are defined by Potter et al (2004) to be regarded as sets of apparently logical propositions, which try to explain how development has occurred in the past and should occur in the future. These theories can either be normative, when they generalize about what should be the case in an ideal world, or positive in the sense of dealing with what has actually been the case.
- *Development strategies* can be defined as the practical development paths, which may be pursued by international agencies, states around the world, NGOs and community based organizations, in an effort to stimulate change within particular nations, regions and continents. (*ibid*)

Hence, in the coming section the two approaches of regional development are briefly illustrated by incorporating their theories and strategies in the discussion.

2-4-1 The Center down approach

The general assumption concerning this approach is that relatively few and large investments are made in specific sectors of the economy within specific locations and the benefits will spread and help other areas. The decisions and strategies for regional development are taken in a top-down way.

The characteristics of the traditional or classical theories of regional development are summarized by MacLeod (1996) as follows:

- Traditional theories stress the core/periphery polarization in which capital flows from the core to the periphery and returns flow back to the core (e.g. investments in oil fields flow from the city to a region, oil flows from the city to power production).
- They assume that development (spontaneous or induced) starts in a few dynamic sectors and geographical areas and spreads to other sectors and areas.
- They emphasize on industrial capital-intensive development, by implementing the highest available technology and maximizing the use of scale economies.
- They stress on the idea that development usually involves large scale investment projects, efforts to increase functional and territorial integration and increasing the scale of private and public organizations required to transmit development to other locations.

Several of these characteristics are evident in the national/regional development attempts that took place in Egypt in the past, which are analyzed and discussed in chapter four.

The center-down development theories

Most theories explaining the center-down approach of development pivot on the polarization and the core-periphery arguments, which evolved as early as the 1950s through the works of Perroux (1955), Myrdal (1957) and Hirschman (1958) with further elaborations through the work of other scholars including Friedman. This section gives a brief chronological review on some of these theories which would facilitate the understanding of the development attempts that took place in Egypt and the case study region discussed in chapters four and six.

The growth pole theory

The core idea of Perroux's (1955) growth pole theory is that economic development is not uniform over an entire region; instead it takes place around a specific pole.

This pole is often characterized by a key industry around which linked industries develop, mainly through direct and indirect effects. The expansion of this key industry implies the expansion of output, employment, related investments, as well as new technologies and new industrial sectors. Because of scale and agglomeration economies near the growth pole, regional development becomes unbalanced.

Transportation, especially transport terminals, can play a significant role in such a process. The more dependant or related an activity is to transportation, the more likely and strong this relationship. At a later stage, the

Fig. 2-4: The Growth Pole theory

emergence of a **secondary growth pole** is possible, mainly if a secondary industrial sector emerges with its own linked industries, he argues that major poles generate secondary poles, and a new structuring of the economy takes shape as these poles are linked with their environment.
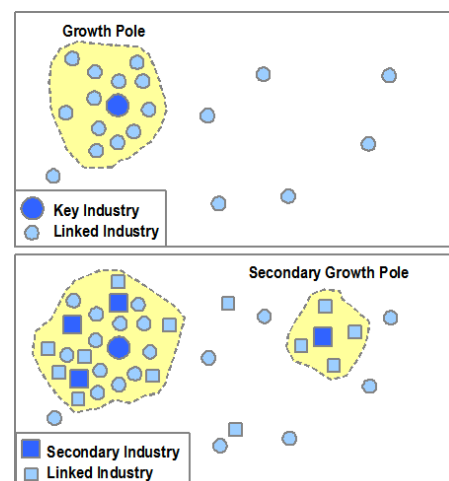
Moulaert and Mehmood (2007) state that Perroux is not only remembered for his analysis of the relationships between economic agglomeration (growth poles within geographical space) and externalities (technological, pecuniary) but also for power relations; his growth pole and regional development analysis adopts a strong institutional perspective and shows how unevenness in economic relations is institutionally confirmed, with only well-established public policy being capable of countering uneven development.

This is evident as well in his later work (1983) in which he puts a strong emphasis on power relations among the different actors or agents; he argues that because they are different and unequal, conflicts of interest and clashes between aspirations or values sought are the rule. In every institution there is the "*spoken and the unspoken*", the things proclaimed and the things left aside, these represents the lower and higher positions of the agents within the institutional hierarchy. At the same time the encounter of major private and public units, both endowed with energy productive of change and expansion, results in intersections or conflicts over the course of time.

He stresses that the political power of the government plays a part in every society, in being a decision maker, an active participant and not an inert apparatus, which together with the public authorities is responsible for ensuring the general good of the whole population and resolving the conflicts arising between the different actors and ensuring a successful regional development. Such views remain valid, since power will always dominant the relationships between actors.

Theory of agglomeration

Moulaert and Mehmood (2007) explain how Myrdal discusses cumulative causation in terms of a tension between backwash and spread effects. He explains how agglomerations often originate as a consequence of either a single or a few economic initiatives but that their development and dominance over lesser centers is a result of ever increasing internal and external economies in the growth centers. Cultural and political processes play a significant part in this and the increasing inequality between growth and lesser centers can only be overcome by active and sustained public initiative.

Myrdal (1957) argues that if for any reasons one section of a country experiences accelerated economic development (perhaps because of a new industrial process or product) that section by, its expanding prosperity, becomes increasingly attractive for investors and other entrepreneurs. Assuming national investment capital is limited, growth in the developing core must come at the expense of the peripheries of the country, in what is known as the ***backwash effects*** through the movements of labor, capital, goods and services to the growth (or core) centers from peripheral areas; these are the media through which the ***circular process of cumulative causation*** evolves upward in the lucky regions and downward in the unlucky ones in such a way so as to continue in polarizing development and leads to a permanent division between prosperous cores and depressed and exploited peripheral areas.

Against the backwash effects there are also certain ***spread effects*** of expansionary momentum from the centers of economic growth to other regions. It is natural that the whole region around a nodal center of expansion should gain from these spread effects and be stimulated to technical advance. Even for areas farther away, where favorable conditions exist for producing raw materials for the growing industries in the centers; if a sufficient number of workers become employed in these other localities even consumers' goods industries will be given a spur there.

If the expansionary momentum in these areas is strong enough to overcome the backwash effects of the growth centers, the cumulative process works in favor of these areas and they become in their turn new centers of self sustained economic expansion.

He argues, however, that usually the spread effects in developing countries are weak; this means that the backwash effects will strengthen and create regional inequalities between already strong regions and other poor and weak ones.

In his work Myrdal also tackled the role of the state in regional development, which he assumed must be responsible for both initiating the over-all plan and seeing that it is carried out. The plan is considered a program for the strategy of a national government in applying a system of state interferences with the play of market forces, thereby conditioning them in such a way as to give an upward push to the social process.

It is therefore obvious, that there is a strong reliance on the role of the state in setting national and regional development strategies, furthermore, Myrdal (1957) also stresses on the importance of making a "blue print" by the state for national and regional development, which should be carefully carried out.

Polarization theory

Taking into consideration the previous concepts, Hirschman (1958) argued that polarization should be viewed as inevitable characteristic of the early stages of economic development. This represents a direct advocacy of a *basically unbalanced economic growth strategy*, where by investment is concentrated in a few key sectors of the economy. It is seen that the growth of these sectors will create demand for the other sectors, so that a chain of disequilibria will lead to growth.

At the same time several unfavorable polarization effects might take place; comparatively inefficient yet income creating activities in the weaker regions might become depressed because of competition from the growth regions, which attract both investments and migrating skilled labor from weak to strong regions.

The crucial argument however, was that eventually; development in the core will lead to the "trickling down" of growth inducing tendencies to backward regions, in other words, once growth takes a firm hold in one part of the national territory, it obviously sets in motion certain forces that act on the remaining parts.

 It is argued that income convergence will occur as trickle down effects work to diffuse benefits outwards from the center in the form of higher prices paid for needed materials or through the dispersion of technology to branch plants or contract suppliers in lower- cost regions of production, this should take place if the economies of the two regions are complementary.

He is confident that in the end the trickling down effects will gain the upper hand over the polarization effects in the weaker regions if the strong regions have to rely to an important degree on products from the weaker regions for their own expansion.

Accordingly, he argues that national governments in developing countries have two important roles in relation to development, on one hand they must initiate growth through forward thrusts, that are meant to create incentives for further action and then they must stand ready to react to, and to alleviate the pressures of the polarization effects in a variety of areas. This is done by offering incentives and actions in weaker regions through public investments and establishing key economic activities or projects in the weaker regions to stimulate them, which was a trend at that time, for example the construction of the new Brazilian capital to stimulate growth in a neglected region of the country.

He also argues that the most obvious manner in which economic policy of a national government affects the rates of growth of different parts of a country is through the regional allocation of public investments, he identifies three patterns of allocation: dispersal concentration on growing areas and attempt to promote development at backward areas. In most developing countries the approach adopted is that of dispersing investments among a large number of small projects scattered widely over the national territory, so that the national governments gain support from all sections of the country.

However, the problem is that development often begins with the sudden growth of one or few regions, resulting in serious shortages in different sectors and services in them, which requires immediate action and concentrated investment to resolve them despite the government intention of dispersion.

Yet, if the funding for development is coming from international donor agencies, then the type of investment is concentrated on small number of key projects, which is still the case in contemporary times.

The Core-Periphery model

Based on the concepts of polarization, the core-periphery model was formulated by Friedman (1966), based on his research in Latin America; he argued that "where economic growth is sustained over long time periods, its incidence works towards a progressive integration of the space economy".

According to Friedman; any country consists of one or more strong regions called the core in which economic growth and development take place, while other weak regions in the country which face polarization effects are called the periphery. In almost all cases urban centers constitute the core regions, which exercise a decisive influence on the periphery and consolidate their dominance through several polarization effects such as:

- The dominance effect: the periphery is weakened by constant net transfers of natural, human and capital resources to the core.
- The information effect; potential contact and interaction are greater in the core region.
- The psychological effect of innovation success.
- The modernization effect; at the core social values and behavior change more rapidly to conform to innovations.
- The production effect, the creation of an attractive reward structure for innovations including specialization and growing economics of scale.

Accordingly, Friedman introduces a four stage model of development (figure: 2-5):

Stage 1: Independent local centers with no hierarchy, represents the pre-interference stage and is associated with a series of isolated self sufficient local economies. There is no social surplus production to be concentrated in space and an even and essentially stable pattern of settlement and socio economic development is result.

Stage 2: A single strong center caused by an external factor (e.g. colonial interference) transforms the stability into dynamic change. Growth is envisaged to occur rapidly in one main region and urban primacy is the spatial outcome. This center feeds on the rest of the nation and the extensive periphery is drained, yet, this stage is considered inherently unstable.

Stage 3: The outcome of this stability is the development of a single national center with strong peripheral sub-centers. Over time the simple center-periphery pattern is progressively transformed to a multinuclear one, sub-cores develop leaving a series of inter-metropolitan peripheries; this is regarded as the point of polarization reversal when development starts to be concentrated in parts of the former periphery, yet on a highly concentrated basis.

Stage 4: which sees the development of a functionally interdependent system of cities, described as "organized complexity" and is one where progressive national integration continues, eventually witnessing the total absorption of the inter-metropolitan peripheries.

He argues that the transition between the second and third places is critical, and difficult to take place on its own in developing societies; in this respect, development will become more concentrated in space with polarization effects always tending to exceed the so-called trickle-down effect, therefore state intervention is required to overcome the polarization effects, as discussed earlier by Hirschman.
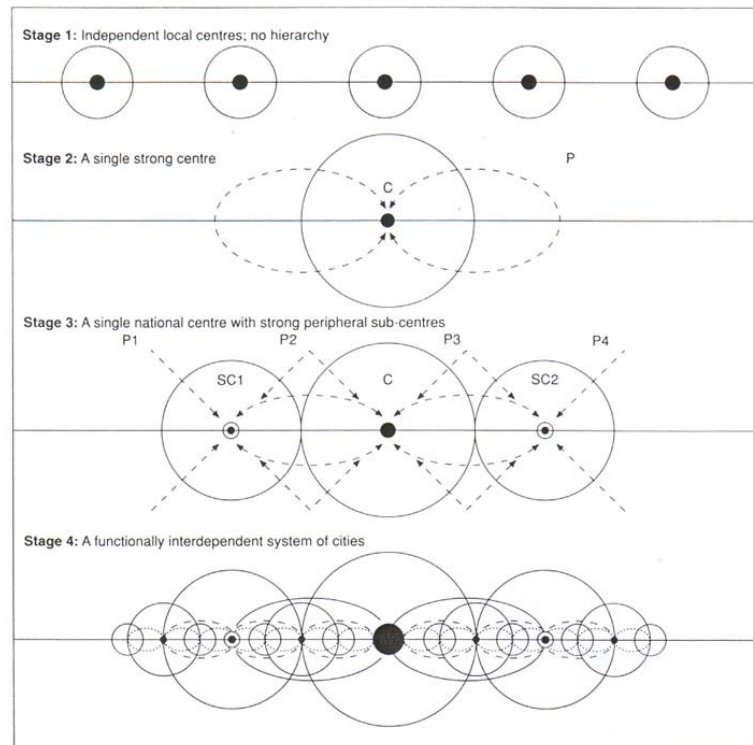
Fig. 2-5: The Core-Periphery Model

The hierarchical downward diffusion of development

Following the polarization doctrine, development should occur in a hierarchical way. Hudson (1989) argues that growth occurs within the settlement system from the largest urban places to the smallest in a basically hierarchical sequence.

He argues that diffusion can
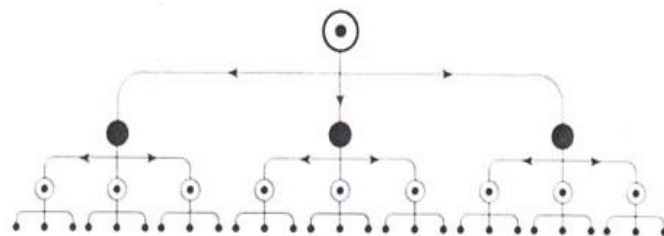
Fig. 2-6: The hierarchal downward of development

occur downwards through the settlements system in a progressive manner with the point of introduction being the largest city.

Simpson (1994) mentions that the terms of a hierarchical central -place system, lead to the idea of establishing new urban centers, secondary cities, or stimulating the growth of old smaller centers, the decadent towns, to fill the gaps in the hierarchical system and making it more coherent through which development can be diffused .

Policy-makers and regional planners believed (and many still believe) in the idea that small towns play an essential role as regional service centers in hinterland development through direct production linkages and spread and trickling down effects, where the reinforcement of their production and institutional structures not only contributes directly to rural and regional development but was even seen a necessary condition for it, despite that in many cases the contribution of these cities and towns in regional development was not up to the set expectations, as argued by Titus and Hinderink (2002).

In reality as explained in these theories, backwash and polarization effects usually outcome the trickle down and spread effects. ESCAP (1979) mentions that in poor countries economic and political powers often coincide and both tend to be concentrated in the relatively well-developed areas, which further contribute towards geographical inequalities. One result is that areas lagging in development are neglected and become more backwards while the upper end of the hierarchy is the mostly favored.

Simpson (1994) substantiates this argument by stating that major cities can pull in labor from great distances, not by the reality of job-opportunity, but because they are perceived as places of betterment. Labor migration does not efficiently redistribute supply and demand and allow a balanced equilibrium to be reached. Accordingly, few cities in each developing country have grown quickly and became so large that the expansion has outstripped their abilities to provide adequate housing, facilities and formal employment, such as the case of Cairo.

At the same time the existence of vast tracts of territory and people in peripheral regions in a state of stagnation and decline as their resources drain away, presents a constant problem of human, economic and political dimensions.

The center-down regional development strategies

It is not the intention of this section to illustrate an artificial split between the regional development models and strategies, the intention is in fact to have a categorization of both regional economic and regional spatial development strategies, through which the development attempts that were carried out in Egypt and the case study region can be analyzed, which is done in chapters four and six, while taking into consideration the theories explained earlier since the results of applying the regional development strategies in a center/down approach led to a striking case of accumulated polarization in the country.

Regional economic development strategies

In their work, Potter et al (2004) identify four distinct development strategies for the center down approach:

a) *The liberal model* stresses the importance of the free market and largely accepts the norm based on the English development experience during the Industrial revolution. They mention that in the 1980s and the 1990s these views gained fresh currency in the form of structural adjustment programs that were enforced by international organizations such as the World Bank and the IMF. However, there have been major outcries against their impact and the harm that they do towards the poor.

b) *Keynesianism*, departs from the liberal tradition by arguing that the free-market system does not self –regulate effectively, thereby necessitating the intervention of the state to promote growth in capitalist systems. Since the 1930s, Keynesianism has been a strong development ideology in the industrialized capitalist world, especially in countries with a social democratic tendency.

c) *State capitalist strategies*; refer to an early phase of industrial development in continental Europe, principally tsarist Russia and Germany. The approach advocated the development of enforced industrialization based primarily on agrarian economics, in order to promote nationalism and for reasons pertaining to national security.

d) *The soviet model* represents a radical state-oriented strategy inspired by Stalin's five-year mandatory economic development plans. The approach regarded modernization as the goal, to be achieved by means of the transfer of resources from agriculture to

industry. The agricultural sector was collectivized, and heavy industry was given the highest priority. The state completely replaced the market mechanism.

Through the past regional development attempts in Egypt, some of these strategies were adopted in different periods of time, specially that the political system in the country shifted from capitalism to socialism through the 1950s - 1970s and again to capitalism in the 1980s, these are discussed in chapter four.

Regional spatial development strategies

The spatial dimensions of regional development are reflected through the national urban development strategies, where there is a direct spatial intervention realized on the level of urban settlements. These strategies are clearly identified in Richardson's categorization of national urban development strategies (1981), (cited in Potter et al, 2004) where he presents ten types of national development strategies, categorized into two main categories: concentrated urbanization and de-concentration.

The first category of **concentrated urbanization** consists of:
1) The *laissez faire* policy of letting the market takes its course.
2) If, however, problems of congestion and imbalance are recognized in the primate city, efforts may be made to deconcentrate, but merely within the core region. Thus, a *polycentric pattern of growth on the edge of the primate city*.
3) Or a form of *a rapid deconcentration (also referred to as Frog-leap deconcentration)* to the edge of the existing core may be envisaged.

Strategies of genuine **de-concentration** can be categorized into seven generic types:

4. *Development corridors or axis* can be designated, leading from the core region, and growth can be focused upon them.
5. Alternatively, growth may be channeled into what are regarded as dynamic *growth poles or growth centers*.
6. A variation on essentially the same theme sees the strengthening of a few distant major nodes as *counter magnets*.
7. Other forms of deconcentration can be created by the promotion of a limited number of *secondary or intermediate cities*.
8. Or the establishment of *provincial state and departmental capitals*.
9. Yet another variant involves the promotion of *regional metropolises and an associated hierarchy of urban places*.
10. At the far end of the spectrum, a dispersed policy of *small service centers and associated rural development* throughout the periphery may be pursued.

Alaam et al (1995) discuss the aims for using each of these categories/ patterns in addition to a third type of national urban development.

He explains that the main aim for the *concentration pattern* is to achieve the most economic benefit, this is done by focusing on the primary cities of the country, where most of the resources and efforts are concentrated, in order to get maximum benefit, this pattern can be seen in China as discussed earlier. In Egypt this spatial pattern of concentration is evident in the Nile Valley as discussed in chapter one and in Cairo (Figure: 1-5), however, this is not an outcome of the national urban development strategies but because most of the investments used to go to Cairo leading to the concentration of almost half the urban population in it.

At the same time the *deconcentration pattern*, aims to tackle regional inequalities between the different regions of the same nation, through the distribution of population, investments and activities upon them, to establish a certain degree of growth.

This is seen for example in the French regional planning attempts, as described by Hall (1992), where several cities were promoted to be "métropoles d'équilibre" which were developed to achieve more balanced growth and avoid over-concentration on Paris that hosts 15% of the urban population.

The third pattern is *dispersion in a concentrated pattern*, also identified by Lutter (2001) as the **de-concentrated concentration**, which is considered a second phase of the de-concentration strategies, where the population, work places and infrastructures are concentrated in cities of different sizes that are relatively spread over the whole country.

This is seen clearly in Germany that has a decentralized settlement structure, with a reasonable distribution of population, where only 5% of the urban population living in its capital city.
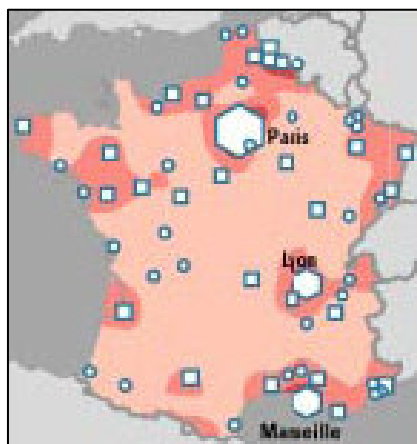
Fig.2-7: The French de-concentration
Source: Lutter (2001)
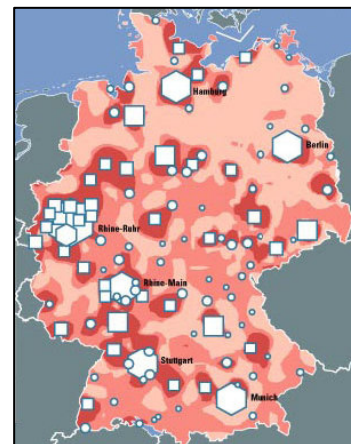
Fig.2-8: The Concentrated deconcentration in Germany
Source: Lutter (2001)

2-4-2 The Bottom - up approach

By mid 1970s, the debate towards a different approach for development started to take place. Guimaraes (1998) explains that this was due to the disappointment with regional planning, that after three decades of continuous regional planning efforts to foster regional development, reduce regional disparities and spatial concentration, the situation that sparked the attempts for regional planning for development was not altered, in most cases the results of intervention turned out very modest. However, this might not be a totally appropriate account, since in some cases such development attempts achieved variable results.

Potter et al (2004) argue that such attempts achieved economic growth without development, but with increasing poverty; where basic needs received the least priority, assuming that they will be somehow met through the trickle down effect of the development projects, such projects, which exist in many developing countries, have in many cases produced greater inequality, poverty and un employment.

Moulaert et al (2000) substantiate this statement when they argue that the indicators of development within this approach avoided important questions on social and geographical distribution of income growth and production and ignored their negative effects which cause the devastation of natural and social environments.

Another development

Accordingly, the call for another development emerged in the 1970s with several attempts to define it. One of the famous related bench mark interventions took place in 1975, when the

Dag Hammarskjöld foundation challenged the existing models and definitions of development in its publication "What Now", which also gained support through the United Nations bodies. Coronel and Dixit (2006) mention that this publication rejected the idea of a "one-size-fits all" development model, instead it stressed on pluralism, diversity and the need for societies to employ the resources of their own cultures and histories.

Through this report the idea of "Another Development" was discussed, which is not presenting a specific template for development, instead stressed the consideration of five main principles:

- *Need Oriented*: Development should be geared to meeting human needs.
- *Endogenous*: It should stem from the heart of each society, which defines its values and visions for the future.
- *Self-reliant*: The Development of each society should rely primarily on its strength and resources.
- *Ecologically sound*: The available resources should be utilized rationally in full awareness of the possible effects imposed on present and future generations.
- *Based on Structural transformation*: Structural reforms are needed so as to realize the conditions of self-management and participation in decision-making by all those affected by it, without which the goals above could not be achieved.

It is important to mention that these elements are currently being revisited by the same organization in a project called "What Next" through contrasting these elements against the current global settings to further modify or introduce other elements.

Moulaert et al (2000) illustrate that the satisfaction of basic needs should be considered the main objective of development attempts. In that sense they stress the importance of rediscovering the capacity of individuals to respond to their basic needs and overcoming their economic difficulties, while ensuring the inclusion of all segments of the society in the process, but also taking into consideration that structural changes are needed to improve individual and collective potentials to respond to such needs.

Accordingly, another development or an alternative development is defined by Moulaert et al (2000) to be based on the satisfaction of basic needs, economic and social mobilization, and the political dynamics allowing the establishment of enabling institutions. Such mobilization and empowerment means that decisions and power should be as close to the bottom as possible, as argued by MacLeod (1996), coming from the regional and local levels rather than being imposed from outside. As such self-directed and self-generated economic growth and development occur with greater success than a potentially risky project imposed from above.

This idea is similar to the concept of incentives given by the EU through the structural and cohesion Funds, which are the financial instruments of EU regional policy, which is intended to narrow the development disparities among regions and member States, with the development approaches and projects developed by the regions[18].

Bottom-up development strategies

In principle, there is no single recipe for such strategies as the case with development from above, argues Stöhr (1981), since they should stem from the local contexts and being specific to their socio-cultural, historical and institutional conditions.

However, Brohman (1996) argues that there are six elements that are usually common within alternative development strategies:

- A move towards direct redistributive mechanisms specifically targeting the poor.

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[18] http://europa.eu/scadplus/glossary/structural_cohesion_fund_en.htm, January 2008.

- A focus on local-small scale projects often linked to urban or rural community development projects.
- An emphasis on basic needs and human resource development.
- A refocusing away from growth-oriented definitions of development, towards more broadly based human oriented frameworks.
- A concern for local and community participation in the design and implementation of projects.
- An emphasis on self-reliance, reducing outside dependency and promoting sustainability.

Accordingly, the bottom-up development attempts are currently associated with wider conceptualizations of development and planning, argues Potter (2004), it should include participatory development and collaborative planning, the involvement of civil society and NGOs, the reliance on social capital, stressing for good governance, capacity building and the empowerment of new groups of stakeholders.

These principles and strategies are promoted by the international development agencies to the developing countries; nevertheless, it is important to hint that sometimes bottom-up development takes place spontaneously, directly stemming from local communities.

A clear case is currently taking place in Egypt, in the case study region, where migrant farmers from the Nile Valley managed to establish new communities and settlements in the desert based almost totally on their own intervention and mobilization, this case is discussed in depth in chapter six.

Moulaert et al (2000) argue that alternative development approaches emerge more easily on the local level since it is the level that represents the community identity, perception and mobilization about local issues, accordingly stressing on the endogenous development aspect. Among the alternative development approaches that are applied on the local level and taking into consideration the above elements is the ***Integrated Area Development Approach.***

This approach is based on the satisfaction of basic needs, which is achieved by the combination of several processes, these include: the revealing of needs by grass-roots movements and through institutional dynamics, the integration of deprived groups into the local labor market and the local production systems. These are coupled with institutional dynamics that have a strong role in the process of empowerment of deprived citizens and nourishing local democracy and establishing relationships with local authorities and other involved actors and institutions in the development process.

Albrechts, Van den Broeck and Leroy (1999) identify further characteristics of the above approach that include: adopting the concept of governance instead of government, defining interrelated problems and assets, the specificity of the targeted area in terms of using its own assets and forces, the increasing level of complexity of the tackled issues and the reliance on cooperation between local actors and their inclusion in networks to tackle development issues. Accordingly they all stress the importance of creating bottom up structures of participation, decision making and production based on existing potential assets for development.

They argue that the integrated area development approach takes into account the historical trajectory of the targeted area or locality, hence identifying not only the nature, causes and mechanisms of its socio-economic disintegration but also the potential assets for its recovery. In many areas and localities such assets exist in terms of culture, social relations, tourism and others; which should be mobilized and included in development attempts.

A region is an area that is composed of many localities, which is the situation of the Egyptian case study region, discussed in part three of this thesis, the main approach for developing this region is through capitalizing on the assets existing within its settlements by pooling and mobilizing them to form regional networks, that are manifested in different sectors of activities on the local level i.e. the settlements of the region.

However, in order to do so, local actor groups should be empowered and engaged in the decision making process with the local and provincial authorities to define the specific interventions in their settlements that meet their needs within the broader framework of regional vision. In the Egyptian context, there are indeed several constraints that should be tackled and several conditions to be met for this approach to take place, which are tackled through the second and third parts of this research.

Policies of international development agencies

The USAID (2006) illustrated what it called the "international urban development timeline" from the 1950s until the 2000s, illustrating the influences, polices and programs, institutional roles, methods, tools and practices of development that dominated each decade[19].

This time line shows the change in urban and regional development approaches over the last five decades, which parts away from the center-down approach of development and moves towards the principles of another development.

For example: empowering local governments, democratization and good governance are among the policies and programs taken by international agencies in the 2000s; while the institutional roles for development includes decentralization of responsibilities to local governments, and International financial institutions, donors, and governments reinvent themselves and create alliances and networks with all development partners.

This is totally different from the 1960s' policies and programs of development, which were based on top-down planning, blueprints for society and the 5 and 25year plans while emerging national planning agencies, ministries, executing agencies and development authorities had a clear institutional role.

This change in approach is taking place as well in the attempts of International NGOs working for development, for example Oxfam international whose basic principles for development and relief work include many elements of bottom up development as discussed by Eade (1997) mainly: People-centeredness, human rights, empowerment, participation, interdependence, change and sustainability.

Ironically in some cases the change in policies within developing countries to accommodate the approach of another development only started to take place because of the rules and regulations that are imposed by international aid donors such as the UNDP, UNHABITAT, World Bank and the IMF on recipient countries to pursue the path for decentralization, establish good governance and public participation in development as conditions for receiving development aid. Therefore this change in itself is seen as a result of a top-down intervention, this time, by international organizations, despite that it realizes a needed change in the system. This aspect has been visible in the Egyptian case in the last decade where system transformation has been slowly taking place from a central system to a decentralized system that moves towards better governance, citizen participation, etc. This aspect is discussed in chapter five, through a case of recent intervention for provincial/regional development that took place recently in cooperation with the UNDP.

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[19] The timeline can be checked online as well through http://www.urbantimeline.org/index.html.
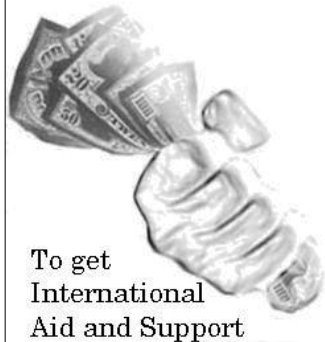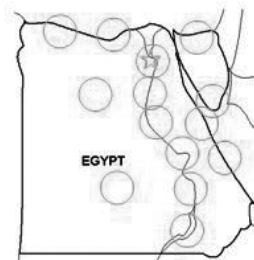
Fig. 2-9: Pressure from International Aid donors on developing countries to change their systems
(Adapted by the author)

2-4-3 new regionalism

Because of the above attempts of defining another development and emergence of the bottom up development approach, together with the contemporary challenges around the world, such as globalization of the economy, achieving sustainable development, devolution of power, etc, a new system of regions is emerging, this system is known as "new regionalism".

It is important to mention that new regionalism can refer to other issues in other disciplines such as the new trade theory in economics and the international geopolitics in relation to neo liberalism and conservatism. In the context of this thesis, it is used in relation to spatial regional development.

Wallis (2007) explain that this expression is used to contrast current experiments with the old regionalism, which generally refers to a varied body of theory and practice spanning the period from the 1880's to the 1980s, some of which were discussed earlier in this chapter.

He argues that old regionalism is a system that can be characterized as a hierarchy, while new regionalism is a network-based system, which is highly dependent on formal and informal networks of social interaction. Regions rich in such networks are in a better position to identify opportunities and mobilize resources to advance themselves. This concept reflects the theme of this thesis, discussed in chapter one, which assumes that through regional networking and networks a region can have the sufficient capacity to achieve development and alleviate regional inequalities, among others, this is discussed in detail in the next chapter and tested through out this research.

A set of six contrasting characteristics define and distinguish the two systems of regionalism from each other based on the work of Wallis (2007) are explained in the following table.

Characteristics	old regionalism	new regionalism
Government vs. Governance	Is basically about government, and the composition of hierarchical systems based on layers of state-local relations.	Is about governance which works to establish visions, goals and policies to achieve them, based on the interests of all actors and with the involvement of private and public sectors that share responsibilities & powers.
Structure vs. Process	Is looking at structural alternatives such as city/county consolidations, and the creation of urban counties.	Its main focus is on processes such as visioning, strategic planning, resolving conflict and building consensus, despite that it sometimes elects a structural alternative as a strategy for achieving an objective.
Closed vs. Open	Is concerned with defining boundaries and jurisdictions to clearly demarcate the region in terms of boundaries for growth, service delivery, job markets, pollution sheds, etc. The region in this case is, in effect, closed.	It accepts that boundaries are open, or elastic. What defines the extent of the region varies with the issue being addressed or the characteristic being considered. This makes it easier to put together the type of cross-sectoral governing coalitions of different actors.
Coordination vs. Collaboration	It focuses on coordination including land use, infrastructure development, services, and the like, which typically implied the hierarchy of government units.	It focuses on collaboration and voluntary agreement among equals. Collaboration thrives when parties to it see each other as distinct yet equal.
Accountability vs. Trust	Its emphasis on coordination is often accompanied by demand for accountability. This is because of fear of the accumulation of power, especially in the public sector, which is being kept in check through procedures of accountability, in many cases results in inflexibility.	It is more inclined to talk about trust as a binding element in relations among regional interests. Part of the discussion about trust relates to the idea of employing regional social capital and civic infrastructure, and establishing trust among the different regional actors.
Power vs. Empowerment	It draws its powers from units of government above and below it. The power to govern had to be taken from somewhere. Local jurisdictions often felt threatened that their powers would be diminished.	It gains power by empowering. Empowerment is based on the assumption that new interests bring new energy, authority, and credibility; it grows power in order to move a regional agenda. This is directed toward actors, with the objective of getting them constructively engaged in regional decision making.

Table 2-1: old and new regionalisms contrasted against each other
Source: Adapted from Wallis (2007)

It's important to stress that the new regionalism does not require dismantling the old regionalism. The old regionalism continues to offer important solutions to significant problems. Rather, the new regionalism is most centrally a response to a new set of problems that the old regionalism was either not aware of, or was not designed to address.

As discussed earlier, the new regionalism is a network-based system, by looking to the previous table many of its characteristics are based on and require networking, which is discussed in the next chapter. This is evident from the involvement of all actors, their empowerment to allow for their collaboration in the development process and visioning, which are based on mutual trust between them that eventually lead to the formation of coalitions and networks.

Thus, it is argued that the aim of this research in achieving regional development in the study region through networking and networks comes in line with the concepts of new regionalism.

Territorial Innovation Models (TIMs)

One of the approaches to achieve regional development based on the concepts of new regionalism has been based on territorial and regional innovation models, which are referred to by Moulaert and Mehmoud (2007) as the spearheads of the 'new regionalism' movement.

They define them as models of regional innovation in which *local institutional dynamics* play a significant role as catalysts in innovative development strategies.

Most of these models address the following features of development and innovation as well as the relationships between them: the core of the innovation dynamics, the role of institutions, the view of regional development, culture, the types of relations among agents and the types of relationships with the environment.

Mainly three families of TIMs can be identified. The first contains the *Milieu Innovateur* and the Industrial District model, the second contains models belonging to the tradition of the Systems of Innovation and the third contains the tradition of the New Industrial Spaces (Moulaert and Mehmood, 2007). These models share several elements and are influenced with theories like economics of agglomeration, endogenous development theory, network theory, systems of evolution and learning and governance (Moulaert and Sekia, 2003).

In their discussion Moulaert and Mehmood (2007) show several shortcomings of TIMs, some of these are mentioned in this section, however, it is not the intention of this research to discuss in depth these aspects, because of its scope and limitations:
- Most TIM models stress the instrumentality of institutions in the economic restructuring and improved competitiveness of regions and localities. But in none of these models is reference made to improving non-economic dimensions and non-market led sections of regional and local communities, unless such improvements could contribute in some way to the competitiveness of the territory.
- According to the TIM, quality of life in local and regional communities depends on growth of prosperity and will appear as a positive externality of higher economic growth; no distinction is made between wellbeing and growth, between community culture and business climate.
- They consider that innovation and learning will improve the market-economic performance of a region or a locality, and in this way will contribute to the achievement of other developmental goals (economic, social, political, cultural), in that sense the different sectors of development are considered as side-products of economic development.
- For a variety of reasons, they regard regional and local development strategies using endogenous resources as the appropriate answer to the uneven and unequal

consequences of globalization and strategies of global players that are not realistic in some cases and require further revision.

Of course the approaches of new regionalism do not stop at this point, as there are further attempts to define concepts that overcome the shortcomings of the TIMs, and even developing further theories of regional development analysis that take into consideration, these shortcomings (for further discussion on this aspect, see Moulaert and Mehmood, 2007).

2-5 Towards networking

Through the discussion held in this chapter, it is seen that regional inequalities exist in almost all contexts but with relative variations. These inequalities are considered the main reason for pursing regional development attempts to alleviate them, but of course they are also carried out to enhance and sustain the performance of strong regions.

For several years and in many countries including Egypt, until recent, the center-down approach for regional development had been applied, with varied results and outcomes; the theories and strategies of this approach have been reviewed and discussed through this chapter, as they help later in analyzing the previous regional development attempts that took place in Egypt in general and the study region in particular.

However, the problem with most of the cited development theories is that they overstate the role of public actors, while not showing enough the role of the private, except perhaps for the theories of Perroux and Myrdal, and they do not address the role of the interactive relations between leading development agents.

Another approach for development evolved in the 1970s that aimed mainly to provide basic needs and focus on endogenous development among other aspects, eventually having common principles that try to achieve regional development through a bottom-up approach.

These were followed (or substantiated) by the concept of new regionalism, which is a networked-based system that pivots on the aspects of governance, empowerment, collaboration, subsidiarity, endogenous development, etc.

The main models of achieving development within this concept appeared as the territorial innovation models, which mainly focus on regional economic development as their main aim while considering the other aspects of development to be realized along the way. These models were not widely (if at all) applied in Egypt in general and definitely not in the case study region, which is why the discussion about them did not go in depth.

The hypothesis of using networking and networks as tools to achieve regional development could therefore be situated within the new regionalism, which is a network-based system and networking has been a main element of it. It attempts to avoid the shortcomings of the TIMs mainly that of focusing on regional economic development and trying to achieve integrated regional development. In attempting to use these tools, the research acknowledges that they are not to replace hierarchies but would combine with them to achieve development, while attempting to address the role of interactive relations between leading agents that are over looked in the traditional development approaches as discussed earlier.

This thesis addresses the use of these tools within the Egyptian context, but in order to be capable of doing so, it is important to understand the theories of networking and networks, their types, levels, success factors and their effects on regional development; this is done in the next chapter that builds a concrete theoretical background on these aspects.

III- Networking and Networks in Space

3-1 Introduction

This research studies the possibility of applying networking and networks as tools for regional development and planning in one of Egypt's peripheral regions to the west of the Nile Valley. To do so, it is necessary to have a clear theoretical background on networking and networks. This chapter relies on literature tackling the theories and approaches of networking and urban and regional networks such as those of Castells, Sassen, Albrechts, Van den Broeck, Moulaert, Innes and Mitchell, from which some important elements are highlighted and deduced to be used later (in part three) in analyzing the Egyptian case study region and examining the possibilities of applying networking and networks there.

As the starting point of this chapter, it is important to acknowledge that networking is not a new concept, that it always existed, as seen from the historical examples discussed later, however it is currently gaining an increasing importance and is being "on the table" because of contemporary settings and circumstances, some of which are:

- Governmental changes: in the government system there will always be a hierarchy, however, such an organization is getting short of having the sufficient means and capacities to develop and realize a policy and is not able anymore to deal with the present needs, problems, issues and societal issues. That is way there is an ongoing change towards governance to define proper means of intervention, networking is therefore considered as a complement to governance. It is important to stress at this point that the concept of governance has not been dealt with in detail in this thesis; the focus is mainly on networking as one of its supplements (Wallis, 2007).
- Changing regional spatial/functional relationships: as discussed in the previous chapter, the change from the old regionalism that is based on the hierarchical relationships between settlements and the emphasis on the functional role of major cities to the new regionalism which is a network-based system (*ibid)* and the importance of cooperative relationships among "groups of settlements" to engage in competition on the regional level; such relationships are supported by networking.
- Growing complexity of issues: because of globalization and new regionalism, issues that were considered in the past to affect a specific city or settlement, currently affects the whole regional system, which stresses the need for more knowledge and inter-learning among the region.

The research however, does not advocate the substitution of hierarchical systems, which remain necessary, by networking; on the contrary, it calls for combining the two concepts seeking better governance, which is among the contributions of this thesis.

From the literature review, it became clear that there is a bit of confusion between networking and networks, with a usual mixing between the two notions, especially within the literature coming from the social science, such as that of Castells (1996) -of course networks are tackled in other domains for example in civil engineering e.g. road and transportation networks and in informatics e.g. computer and virtual networks- therefore first aspect tackled in this chapter is to clearly define networking, which is a social process among actors seeking collaboration and networks, which are considered a result of networking. Such concepts are reviewed based on the works of Moulaert, Fainstein, and Sassen.

The discussion illustrates the different types of networks, which include actor, functional and physical networks. It then shows the levels of networks that include global, trans-boarder, regional, and city regions networks, in which the Egyptian case study is situated as a regional network, while considering the different spatial transformations taking place within them.

The second part of the chapter discusses important reflections on the concepts of networking and networks, which are considered as important **theoretical contributions** of this thesis, these include four aspects:
- First: the difference between network-based and hierarchical systems is discussed in relation to systems of settlements on one hand and the relationships between actors and organizations on the other.
- Second: the reasoning to consider networking and networks as tools for regional development and planning, which is discussed by showing their effects on regional development, which is the same reasoning for their application in the Egyptian case.
- Third: the success factors for their application, which takes into consideration the importance of trust, network power, pacts, etc.
- Fourth: The spatial impacts of networking and networks are discussed, which is an important emphasis of this thesis on their spatial dimension, which is vaguely addressed in most literature. Despite the fact that most of the literature covering networking and networks comes from the social science domains more than spatial and physical planning, serious attempts are made through the different parts of this chapter to stress on the spatial dimensions of networks; inevitably, some shortages in the discussion might be noticed.

It is also important to stress that the views expressed in this thesis are not one sided focusing only on the advantages of networking and networks, it shows as well the limitations of these concepts such as exclusion of actors and the aspects of power and legitimacy.

With this theoretical background in mind, the third part of the chapter shows historical examples of trade networks proving that networking and networks existed throughout history and were clearly manifested in space, then it shows contemporary examples of regional networks to give a better picture on how these notions work in reality. Finally, the chapter concludes by presenting a framework of analysis that is used to analyze the Egyptian case study later in part three of the thesis.

Part I: Networking and networks

This part of the chapter defines networking and networks ; it then discusses the different types and levels of networks.

3-2 Defining networking and networks in space

Several definitions and arguments have spurred explaining what networking and networks stand for. This section is divided into three parts; the first briefly reviews the discussions on networking, while the second on networks, then the third reaches for a definition (or an understanding) of networking and networks in space as a point of reference to use through this thesis.

3-2-1 On networking

Sager and Ravlum (2005) refer to networking as a *process* manifested in the set of relations among actors, either individuals or organizations, where these relations can be described by their content and form; that is, the type of relation and its strength. Therefore the basic assumption of networking is that it is a mean for achieving mutual goals and objectives resulting from collaboration and pooling of resources owned by different actors. As such, networking is made up of a series of negotiations and partnerships, as discussed by Cochrane (1999) linking a range of social actors, who might include elected officials and their staffs, non elected statuary institutions, non statuary and private sector agencies of various sorts, as well as communities, groups and individual citizens; these would form actor networks acting as

agencies in bringing their interests together and turning them to actions. In essence, the parties of a network agree to relinquish the right to pursue their own interests at the expense of others.

Moulaert and Cabaret (2006) state that: "In real life, organizations and agencies are based on interactions between human beings that are to a large extent networked among them. Agents (individuals, organizations) develop and share cultures, modes of communication, principles of (networked) actions and ways of building institutions...."

To summarize: it is argued that networking is a process of social interactions between different sets of actors seeking cooperation and collaboration to fulfill common interests and goals. Accordingly, actors with the same interests and common goals form their networks to create relationships stimulating the fulfillment of these goals, e.g. economic, cultural or social development.

3-2-2 On networks

The notion of networks covers several types, the three main types discussed in this thesis are: actor networks, functional networks and physical networks. These are discussed in detail in a later section. The aim of this section is to give a clear identification of actor networks which is a product of networking.

Frey (2005) distinguishes the network from other forms of social coordination. He argues that the network is neither bureaucracy, nor market, nor community but rather a set of non-hierarchical and cooperative relations. He stipulates that network arrangements are temporary and based on the assumption that individual actors can best achieve their interests through cooperation possibly limited in time and space.

These explanations/definitions of networks are considered from the point of view of social science, which provides several other elaborations by other scholars such as Castells (1997), who states that the traditional meaning of networks remains as the linkage of nodes by flows of individuals, capitals, goods and information, therefore, networks are composed of nodes and links with flows.

It is argued that the nodes could be of any form or location, from the scale of a firm or organization's headquarter to a city. The later is defined by Massey (1999) as a node of social relations and activities in time and space, which host the actors among which these social relations are generated, and the place were different functions and activities happen. These nodes are linked together by physical networks of communication and transportation, as discussed later in this chapter. A graphical representation (figure 3-4) on the concepts of nodes and links is given by Castells (1996), on his analysis for the Pearl River Delta of China, which is later discussed in this chapter as an example on regional networks.

However, one must be very careful when dealing with the concepts of networking and networks, and attempting to use them in regional development. There are some important aspects that should be taken into
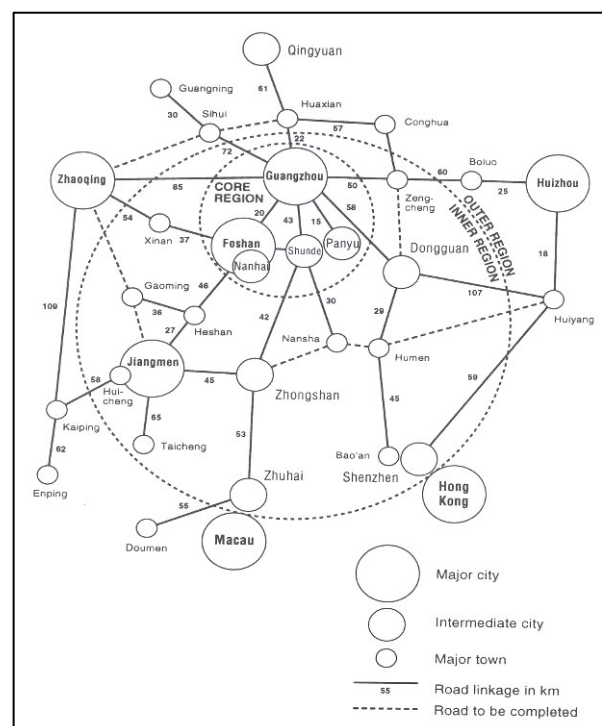
Fig.3-1: Nodes and Links of the Pearl River Delta

consideration, some of which are discussed briefly as follows:

A Normative approach is not an alternative in dealing with networks

Several scholars warn on this, such as Moulaert and Cabaret (2006) who argue that in various spheres of life a network is put forward as a desired configuration of relations among people, organizations, cities, regions, etc. In that sense the network is presented as an attractive ideal to pursue, because of its flexibility, horizontal organization, and equal positions among its actors and stakeholders. But in real-life situations, many conditions exist, which affect the realization of such idealistic networks such as institutional lock-in, the unequal power of stakeholders or individual and collective resistance to stakeholder influences. Fainstein (2005) and Frey (2005) also discuss a similar idea by arguing that the existence of networks does not necessarily contribute to social betterment, on the contrary they may sustain a system of domination and control incompatible with the principles of democracy and political participation. There is no black or white when networks are involved, grey zones are also considered. A further discussion on the success factors of networking and actor networks is given later in the second part.

Networks alone can not produce social transformations in developing countries

This is argued by Frey (2005) and Fainstein (2005) as they assert that the model of civic networks has its limits in developing countries due to extreme inequalities in the underlying social and economic structure, in which the capacity of networks of poor people to produce social transformations is weak. Therefore the role of the state as a facilitator is important in several contexts especially when its hierarchical system is combined with networking in a co-productive manner as discussed later in this thesis.

Processes occur in networks, which exist in space.

The idea of the process is reflected in the work of Castells (1996) who stresses the role of a network as a ***process***, rather than a series of discrete places; it is what flows through the network which empowers particular groups and generates certain nodes as sites of power that are connected to other sites by modern communication technologies. In that sense the nodes might be essential, but the flows within the network determine which nodes will face development and prosperity, and which will not. He argues that the *space of places* has increasingly becoming a *space of flows*.

This could be the reason for Castells not to discuss in depth the spatial dimension of networks in his work, since he assumes that the flows are much more important than the places. However, as Albrechts and Mandelbaum (2005) argue, although many transactions take place in a virtual space such as the internet, this space still needs a material component. They refer to elements like communication hubs, network cables, airports and financial markets that are linked to a number of physical places in space. The importance of place is also stressed by Sassen (1991) as a function of various networks. In her study on Global networks, she argues that cities forming the nodes of the global networks gain their capabilities for global control by bringing together in ***one place*** the right kinds of people, skills and materialities, as well as playing host to the latest in communications technologies.

This is considered centrality, where people and assets are centered spatially in these nodes which are connected to one another via electronic corridors, forming a global network of cities to make up one global system of interconnected "centers". From this discussion it could be concluded that the process and place are both important, as the process is actually being done through the functions and expertise embedded in the place, hence, both cannot be separated from one another and both should be considered when the discussion on networking and networks takes place.

3-2-3 The definition adopted in this thesis

Four important elements are considered when the notion on networking and networks is defined, these are: people, assets and opportunities, space and places, and links; these could be articulated together in the following way.

People (actors) are considered the driving force for any network to take place especially if they are the right kind of people with the right kind of skills, as argued by Allen (1999). These actors would engage in a process of networking to create actor networks, as discussed earlier, to facilitate their cooperation towards realizing their common interests and goals within the settings of the dominating power relations governing them.

On the other hand, *these actors are located in places* in space to form *the nodes* of the network, depending of the level of the network as discussed later in this chapter; these nodes can range from the level of districts or places within districts in city region networks, to cities in regional and trans-boarder networks. Within these places there are numerous crisscrossing networks of interests and powers, in other words, numerous networks of actors as explained by Massey (1999), which means that different interests are involved in

Fig.3-2: Diagrammatic representation of a network, which is considered applicable to all levels of networks, e.g. city regions, trans-boarder and regional networks. The nodes can be cities, districts or even places in the districts. (Composed by the author)

different strategies. The actors in one network could be excluded or included in another one, eventually, as Allen (1999) argues; different kinds of networks co-exist in cities, some with considerable cross-overs, others with little.

These networks attempts to seize **the opportunities to capitalize on existing assets** located within the regional landscape at large, i.e. within the nodes of the network and in the space between them, these could be employed and articulated within functional networks to achieve specific goals and objectives. Allen (1999) hints that these assets and resources include the kind of environment, the type of institutions, the flows of information, the symbolic assets, and so forth. He argues that should there be a mix of resources backed up by a strong institutional presence within a specific node, it could gain a dominant position in the different networks of influence.

The different types of networks, which include the actor networks, which are a result but also hosts to the process of networking, the functional networks, and the physical networks are discussed in detail in section 3-3.

Friedmann (2006) contributes to the view on assets by arguing that there are seven clusters of tangible assets for city regions that should be invested by local governments to achieve development; these clusters include human, social, cultural, intellectual, natural environmental and urban assets. Despite that he relates this classification to city regions, it is argued that the regional space would contain these assets within its settlements, cities, natural and artificial landscape and infrastructures, which could be employed in regional (functional) networks. A brief illustration of his views regarding these clusters is given as follows:

- *Human assets,* which are the people and the quality of their lives and livelihood, which are enhanced by good housing and providing education and health facilities to the population. He also argued that this should be the aim of every genuine development.

- _Social assets_ in the form of organized civil society which is the multiple self-organizing activities of local citizens. Such organized society should be seen as a source of civic strength and an asset worthy of public support. An example on the benefits of such activities would be the housing associations that would assist people in acquiring a home and integrating new comers to the society.

- _Cultural assets_ which are represented in the region's heritage of its built environment and vibrancy of its cultural life, and is divided into physical heritage and cultural traditions.
In terms of the physical heritage it refers to historical buildings and distinctive neighborhoods, these are important in establishing a sense of place, but also important for the people living in these places in terms of valuing their past.
As for the popular traditions in which the whole society would participate such as festivities or occasions, they build bonds of solidarity among the people while giving an identity to the place.

- _Intellectual and creative assets_ of the region which are the quality of its universities and research institutions and their creativity that is essential to a region's future and should count among its finest treasures, and also the artistic capacities in the region.

- _Natural assets of the region,_ which include picturesque landscapes, fisheries and lakesides among others, whose use is both of production and enjoyment. The city depends on its natural endowment and proper city planning should be applied to protect these regional assets from being over run by city expansion.

- _Environmental assets_ which include the qualities of the environment that are necessary to maintain life itself such as air, water and the capacity of the land to support human settlements at high densities.

- _The quality of infrastructure_, which includes the facilities for transportation, communications and other amenities, with the principle of the affordability of these services to all the population of the region rather than only the elite of the society.

People occupy space and, as Camm and Irwin (1984) state, at places within it they make their settlements and organize their activities. Harrison and Dourish (1996) argue that a place is a space which is _invested with understandings_ of behavioural appropriateness, cultural expectations, and so forth. Actors are _located_ in space but _they act_ in place where they use space to consume, to have, to produce and to move around. So a place is more specific than a space, places largely exist within spaces; a place is generally a space with something added: e.g. social meaning, convention, cultural understandings about role, function and nature and so on.
Thus, actors and assets are located in **specific places within space**; these places are within the regional landscape. Space is considered itself a very important resource because it contains the above mentioned clusters of assets, in addition to locational characteristics which can give a certain place an important function, for example, that of a port or of a gateway city, eventually influencing how a specific place functions as a node in a network, and how it meets the objectives of the actor networks.
These nodes in space are connected together through **physical links** of different infrastructure networks supporting different non/digital communications and transportation modes.
Space is an important element as it is there between these physical networks and their corridors of flows linking the nodes together, which defines the characteristics and image of the region(s) involved in the network. In that sense, it is not only the places within space that host the nodes, but also the whole space that hosts the whole network.

To summarize the **definition of networking and networks** used in this thesis:
A network is not only composed of nodes and links but also the space containing them and between their nodes and physical links, in which assets exist and activities take place. The nodes of the networks host the actors, and are the places for several functions and activities as well; the links are the corridors of communications and transportation between the nodes and extending through the regional landscape. Networks are created when there is networking for cooperation between actors (located in the nodes) to realize common goals and objectives.

3-3 Types of networks

Albrechts (1998) argues that for a network to be realized, there are five major criteria that should exist:
- The quality of the areas involved in the network.
- Complementarity of the nodes in the network.
- Flows of goods, people and information between these nodes.
- The physical links between the nodes.
- Various forms of organizational and actors' linkages between the nodes.

Albrechts stresses that these criteria must be met in order for an area or region to qualify as a network. They are mutually dependent and complementing each other, if one criterion is weakly or not at all met, the other criteria are negatively affected. From the case of the Flemish Diamond, he argues that first four criteria are met, however, what is lacking is the fifth one, and therefore he considers the network to be in the making.

These criteria are related directly to the elements discussed in the previous section, in the sense that the *quality of the areas* involved in the network is manifested in the *space* containing the elements of the network.
The *complementarity of the nodes* is related as well to the *assets and opportunities* within the different nodes that would functionally complement each other. The *flows* between these nodes are related to *networking between actors* and would include flows of information, goods, people and investments; in which their efficiency depends largely on the quality of the *physical links* within the networks. Finally, the various forms of *organizational and actors' linkages*, are dependant on the cooperation and networking between the actors within the nodes.
Accordingly, by merging the above criteria and elements, it is argued that for networks to be realized, three main success factors[20] should exist, these are:
- The *existence of opportunities* in the form of assets, potentials and activities upon which functional networks are realized.
- The will of involved actors to engage in a network with the aim for achieving common interests and goals related to development with no hidden agendas.
- The abundance of proper means of communication and transportation networks between the nodes of the intended network.

Consequently these factors are argued to be projected into three types of networks bundled together to form a coherent regional network, this argument is also valid for other levels of networks, e.g. global and international networks. These three types are:

- Actor Networks
- Functional Networks
- Physical networks

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[20] The success factors mentioned here are based on a discussion with Prof. Van den Broeck in March 2007 and are further elaborated in this chapter.

These are considered among the building blocks of regional networks. Of course it should be taken into consideration that this is an eclective view of these three types of networks; more theoretical work will need to be done to show the proper theoretical logic of each of these networks. It should be remembered that it is mainly the actors' networks that were theorized, but their links with functional and physical networks has not been properly addressed, because of the absence of proper social science analysis of functional and physical network concepts.

3-3-1 Actor networks

Networking between actors is the driving force for networks to evolve, as discussed earlier; Antikainen et al (2001) argue that actor networks are perceived as a mode of operation in regional development, since cooperation can realize objectives which cannot be achieved alone.

Features and purposes

The purpose and benefits of actor networks is to facilitate coordinated behavior, without having to accept the rigidity of inflexible, bureaucratic organizations. Frey (2005) elaborates that their core feature is trustworthy cooperation between autonomous, but interdependent actors, working together for a limited period of time, taking into consideration the interests of their partners, and being aware that this form of coordination is the best way to attain their own particular objectives.

Within these networks, a common vision of development for a region is formulated to realize the different aims and objectives of the actors related to the network. A similar argument is given by D'Hondt et al (2002), whose work was related to polycentric urban regions; they define an urban network as an urban region where different actors are working together in an informal or formal cooperation focusing on chosen key-issues in order to develop a common vision for the area and a concrete action plan concerning their key-issues[21]. This same argument is valid in the case of regional networks, whose nodes are not of close proximity to each other, but their actors are willing to work together to reach a common vision to realize their interests and goals within the region, which is the foreseen situation in the Egyptian case.

The actors

Actor networks include the groups of the civil society affected or involved in the regional development, to reach for a common vision for the future of their region, while taking into account the interests of the different actor groups. The problem, however, arises from the fact that in many cases the negative aspects of actor networks are usually overshadowed by their normative criteria. De Souza Briggs (2005) warns that despite networks are demonstrably valuable, there is a tendency of imagining them as: consistently positive while their effects are much more mixed, and as remedying failures of the state, while networks are also superb devices for parochial sabotage.

Inclusion and exclusion of actors

Frey (2005) argues that usually, the involved actor groups within the network are the dominant status groups, since communities are characterized by social stratification, in which some strata have more power than others and would work on pursuing their interests. This idea is expressed in a statement by Castells (1999) when he says:

> "*The most critical distinction is to be or not to be in the network. Be in the network and you can share and overtime increase your chances. Be out of the network or become switched off, and your chances vanish since everything that counts is organized around a worldwide web of interacting networks.*"

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[21] Cited in Van den Broeck (2003).

This is substantiated by Peters (2005) who concludes that networks are necessarily *exclusive* since they consist of interactions among limited groups of actors, who constitute particular power relations, which do not conform to the principle of equality and inclusiveness. As such, an actor network can be perceived as a concentration of power, which sometimes might oppose the interests of those outside the network. This could only be ameliorated by at least taking into consideration the needs of local communities through inviting their representatives to join the network, thus having the opportunity of discussing their problems and their propositions to resolve them.

However, it should be taken into consideration that exclusion of certain people (actor groups) could affect the legitimacy of the actions taken by the network, if it excludes government agents, which might conflict with the agenda of the governmental hierarchical system, therefore it is better to have a representation of the different government agents within the network, which is discussed later in this section, and also to combine networking with the hierarchical system.

De Souza Briggs (2005) describes networks as sometimes abusive, and he sets the priority of dealing with this abuse on the top of his call for a public challenge in leveraging networks, which includes:

- *guarding against their abuses,* particularly since bridging networks primarily confer benefits on members, and because they are deliberate instruments of exclusion in some cases;

- *compensating for the limitations of networks,* since there is a tendency to turn social networks into mere "shock absorbers" for social problems, for which the networks are vastly under-equipped; and

- *extending their benefits without micro-managing them* that is without trampling on the flexibility that allows people to benefit from cooperating informally with each other, often by bonding along ethnic and class lines.

The matters of exclusion and inclusion in networks have also to do within the power settings and among their actors, there is usually an unequal power of stakeholders within networks, discussed earlier in the argument of Moulaert and Cabaret (2006)[22], in which stronger actor groups manage to gain strong positions through which they lobby and push for the realization of their interests.

In their work on the network theory and their comparative analysis of three network theories: New Institutional Economics, Economic and Institutional sociology and Economic evolutionism . All these theories defend rational approaches to human behavior and stress the role of procedures in information gathering, exchange and institution building; but the sense of complexity in reading rational behavior, institution building, interaction with the environment and coordination of agents is uneven among them.

They argue (Moulaert and Cabaret) that power relations are not taken into consideration within the analysis of Networks (in the above theories), which are usually seen as an efficient mode of organization of exchanges between agents because they are conceived as structures of decision-making between (potential) equals. However, the actors are not equals when it comes to power dynamics; this leads conflicts due to overlooking the interests of weaker actors, hence causing un-approvals of the consensus developed within the network.

A wider scope for development vision
Getting involved in a network aiming to establish and pursue development goals mean that the actors involved in it should have a broader scope of places of interventions and activities to include different levels, e.g. local to regional levels and even higher levels. Therefore the time frame included in the development process should stretch beyond the present situation to include the near, medium and long term future. This idea is advocated by Meyers (2005), who argues that the decision-making process is locked in the present, as local citizenry and officials evaluate the planning alternatives in light of their current goals and perceptions of the world.

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[22] Refer to the discussion in section 3-3-1.

Even if planners tried to include longer term development plans, they are obliged to be responsive to local stakeholders and elected officials in a democratic environment, therefore the above change is needed.

State/Public actors as agents in the networks

Representatives of the different government levels are regarded as important public actors within the network who help to overcome hierarchical constraints. Since, there is always a need to cooperate and coordinate with the different government levels, and in many cases up to the level of the state, when it comes to development projects that need funding, legal permits, and logistic support and knowledge. As argued by Peters (2005) there are different networking structures and dynamics that work at different levels of decision making, accordingly the way the public agents interact with the networks on the local level differs from that on the provincial or regional levels. It is argued that if the development process is on the local or regional levels, then their governments are directly involved in formulating the development visions with other actor groups, perhaps even stimulating development attempts within the actors, the role of the upper tiers of the government will be merely to give support and acknowledge that these visions are inline with the national vision.

Governments' involvement in the development process means that their hierarchies has to be considered while working with networks, despite that in many cases, networks are portrayed as the better replacement for other systems. De Souza Briggs (2005) warns on this matter as he states that there is an over-selling of the concept of networks, which reflects a turn away from formal institutions, including hierarchical public ones, and away from the role of the state. He stresses that some restoration of the balance should be done, and this means paying more attention to how formal and informal institutions interact and, how they promote productivity and accountability in each other in a form of interdependence. This is also referred to as synergy, which one of its form comes in embeddedness next to complementarity, he refers to the work of Evans (1996), that often includes varied networks, where direct linkages among the state, civil society, and in some cases markets, make collective gains possible.

Siembieda (2005) refers to the cooperation with the different government levels as vertical networks which link national-level organizations, such as different ministries, to more local units such as municipalities and neighborhood committees. He argues that these networks would provide resources in a variety of ways, and avoid the single solution approach designed at the central level. However, for these vertical networks to function there are several factors that should be present within the national system; the most important ones are:

- The Principle of Subsidiarity in which the lower tiers of the government have sufficient powers for decision making and taking on their levels.
- Decentralization, which in fact supports and realizes the subsidiarity principle as it enables for a decentralized decision making and taking as well as implementation.

A proper description for the relationships within the actor networks is illustrated by Low (2005) who refers to it as the networked polity, which is a structure of governance in which both state and societal organization are vertically and horizontally disaggregated but linked together by cooperative exchange in which knowledge and initiatives are decentralized and widely distributed. Sometimes, however, it is difficult for higher levels of government to accept these settings, since they consider themselves more competent in defining and defending the more important objectives for all levels, a stance that require further change.

From this discussion it is clear that it is difficult to apply the concept of vertical networking within centralized countries, as they are lacking the two above factors. In many developing countries, the prevailing systems are centralized top down systems, which eventually would not support such networks. However, because of contemporary global settings and the pressure of international development agencies, there has been a tendency within these countries towards devolution of powers and the change to more decentralized systems, this has been the case with Egypt as discussed later in chapters five and nine.

3-3-2 Functional networks

One of the important elements in regards to a regional network is the presence of different assets and opportunities within its nodes.

This would allow for a theme round which interrelated activities articulate to form functional networks located spatially within the nodes of the regional network, hence, establishing a relationship that takes advantage of the existing assets and opportunities, which realizes the interest and objectives set by the actor networks, it is therefore argued that functional networks are manipulated and run by actor networks..

In order to seize the opportunities related to the existence of such assets, the will of the involved actors is needed to establish such relationships, provided that they have the proper capacity and knowledge to appropriately use them, in addition of course to the success factors of networks that are discussed later.

Perhaps the notion of functional regional network could be explained, as argued by Knaap (1998), as a region with a spatial functional division of labor. Or from Lin's (1997) position in which he considers the nodes of the regional networks as simply cities (from the macro level point of view), linked in different functional networks and are designated according to their major economic functions. Meijers (2005, 2006) hints that, theoretically, functional relationships within the nodes of regional networks; are based on either complementarity or cooperation. He explains that a complementarity relationship means that the nodes within the network perform different economic roles and hosts complementarity facilities, activities, residential and working environments. This occurs because the assets and opportunities existing within or controlled by these nodes are of different natures; which would lead to specialization among them, hence, a complementary functional relationship would evolve; a good example is the Randstad, which is discussed later in this chapter. As for cooperation he explains that such a relationship takes place the nodes within the network have similar characteristics and assets, thus joining forces to achieve kind of a common objective or common interest therefore generating economies of scale. In this type of relationships, the nodes within the network might have parallel relationships based on other interests and objectives, accordingly they might be involved in more than one functional network. However, in real life relationships in regional functional networks include both cooperation and complementarity between the nodes.

It is argued that the manifestation of the functional networks in space is more visible than that of actor networks, since basically most of the functions tackled are manifested in space or cause its transformation. For example in case of specialization of nodes in industry or manufacturing, these industries are manifested in space through their factories, or if the nodes are complementing each other in terms of residential districts of different qualities to match with the range of demands, especially within polycentric urban regions as illustrated by Meijers (2005), these in themselves are of physical spatial dimensions.

In the Egyptian case study, discussed in part three, two functional networks are proposed: agriculture and tourism, these functional networks are based on both aspects, i.e. cooperation and complementarity. As discussed later, the nodes that would be involved in the tourism network have similar general characteristics in terms of the presence of attractions, and tourism opportunities, though in essence the nature of attractions differs, accordingly, a scheme of cooperation within these nodes could evolve. In the case of the agricultural network, the functions of the different nodes within the region, despite that they all have agriculture as a common activity, differ in their supporting functions that are processing and marketing the products, hence the network will be based mainly on complementarity. But of course both networks in real life will be based on a mixture of cooperation and complementarity.

Despite the above discussion, it should be taken into consideration that the analysis on functional networks is considerably weak if compared to that on actor networks and that it needs further investigation and academic research. The aim here is to give a brief explanation on functional networks in order to be used later in the analysis within this research, especially that the objective in this thesis is to look for possible networks of different functions in the Egyptian case study region, which could be considered within a regional development strategy.

3-3-3 Physical networks

The importance of these networks, arise from the fact that it is almost impossible to conduct any form of development for a certain area, if it is not accessible[23]. Mustikkamäki et al (2001) state that physical networks (especially infrastructure networks) are usually seen in promotion of regional development as actual development objects with a strong physical-spatial dimension. These networks enable regions' accessibility and the directing of various flows in and out of a region; thus they consider functioning physical networks a basic prerequisite for a successful region.

With the presence of adequate physical networks, the operational dynamics of cooperation and complementarity within functional networks takes place; therefore physical networks are argued to constitute part of the functional networks. Their importance also arises from the fact that they support all the actors involved in networks within the region, even if they belong to conflicting or different networks, the same is true for functional networks.

A physical network is considered the common support for all the actor and functional networks within a region or an area.

In general, they are defined as movements of goods, people, information, money etc., seen often as growth corridors consisting of several cities and towns. Physical networks are frequently conceived as elements of the regional and urban structure in the form of mobility and transportation infrastructures i.e. road and transportation networks, and telecommunications networks, which ensure reasonable and adequate level of accessibility and connectivity; they also describe the quantities of flow between different regions and cities, such as volumes of traffic, travelers, and commuters (*ibid).* Of course, one must be careful when stressing the importance of physical networks as elements for structuring space, as there are other important elements that have a major role in the structuring process for example the urban tissue, which is a fundamental characteristic in any human endeavor.

It is argued that when dealing with physical networks, one must look at three main elements: *the type of flows* passing through the network, *the proper time to reach the destination* and *the*

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[23] A straight to the point fact that was pointed out many times, also clear in the work of Smith (1974) through his analysis of the development inequalities in Uganda.

type of courier. This research distinguishes between two types of physical networks according to the type of flows passing through them as follows:
- If the flows are people/goods, who/which need adequate time for transportation and commuting, and are being carried by different means of transportation, then these networks are mobility and transportation infrastructures networks.
- If the flows are of information, money, and social interaction, with a strong reliance on real time, where the flows are carried through means of telecommunications and the internet, then these networks are Information Communication Technologies (ICT) networks.

These two types of networks are discussed briefly, as they are important elements in establishing a regional network. This aspect is later used in analyzing the case study region, to figure out the existing elements and the ones that should be fulfilled to establish an enhanced physical network there, this is discussed later in chapters eight and nine.

Mobility and transportation infrastructure networks

These types of physical networks are seen as promoting regional development and are *usually considered themselves as (regional) development projects*. They are manifested and realized in the form of road networks, airports, aviation hubs and railways, with an emphasis on their capacity and service levels that ensures proper connectivity and accessibility to and within the regions. One of the main roles of these networks is to ensure a proper commuting and travel time between the different nodes in networked regions; this is a crucial factor, for the functional networks existing between these nodes.

This argument is stressed by Bertolini (2005) who states that these networks provide people with ways of interacting in the absence of physical proximity, enabling them to live, work, and recreate in different places, leading many people and businesses to seize the opportunities provided by these networks to escape from the disadvantages of physical concentration and to decentralize spatially.

In many regional networks and polycentric urban regions such as the Randstad and the Flemish diamond, the cities are in close locational proximity to each other in addition to the advanced road and transportation networks, eventually, the commuting time within their nodes are reasonable. However, in the case of cities and settlements that are far in location from each other, such as the Pearl River Delta in China and the case study in Egypt, this is considered an obstacle towards the possibility of networking, that should be overcome, perhaps through the concept of hard and soft distances.

Hard and soft distances

The expressions soft and hard distances were introduced by Axelsson (1987) who used the term soft distance to indicate the socio-cultural distance between actors or entire networks in terms of attitudes, values, norms or culture, while he used the term hard distance to indicate the physical distance[24].

Yet, the same expressions are redefined and used in the analysis of mobility and transportation networks in the following manner:
- *Hard distance:* is the actual physical and spatial distance between two nodes or places.
- *Soft distance*: is the actual time taken to travel between the two nodes, regardless of the actual physical distance.

Accordingly, it is argued that in some cases the soft distances are large in comparison to the actual hard distances and vice versa. A simple example would be that of traveling within the city; sometimes, reaching a point in the other side of the city by through trafficking takes more time, than reaching for the same point using a ring road around the city, despite the fact

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[24] Cited in Kamann, D, 1991, The distribution of dominance in networks and its spatial implications, in Regions reconsidered, edited by Bergman, E., Maier, G. & Tödtling, F., 1991, Mansell.

that it is actually longer in distance. Thus the soft distance in the second case is shorter than the first case, while the hard distance is longer; however, sometimes achieving shorter soft distances can have un-ecological effects, e.g. cutting trees to construct ring-roads or the sacrifice of green fields for such a construction[25].

Similarly, when discussing the proper distances within the nodes of a network, it is argued that soft distances are more important than hard distances, which is reflected on ensuring a proper commuting time and accessibility means, regardless the long distances.

This is further substantiated by the following arguments:

- Potter et al (2004) refer to the debate on the world becoming a global village, and the associated compression or annihilation of space by time, in the context of what is referred to as the *shrinking world* introduced by David Harvey (1989) due to the evolution of transportation modes; the same argument is valid as well because of the rapid development of telecommunications as illustrated in figure (3-19). But they draw
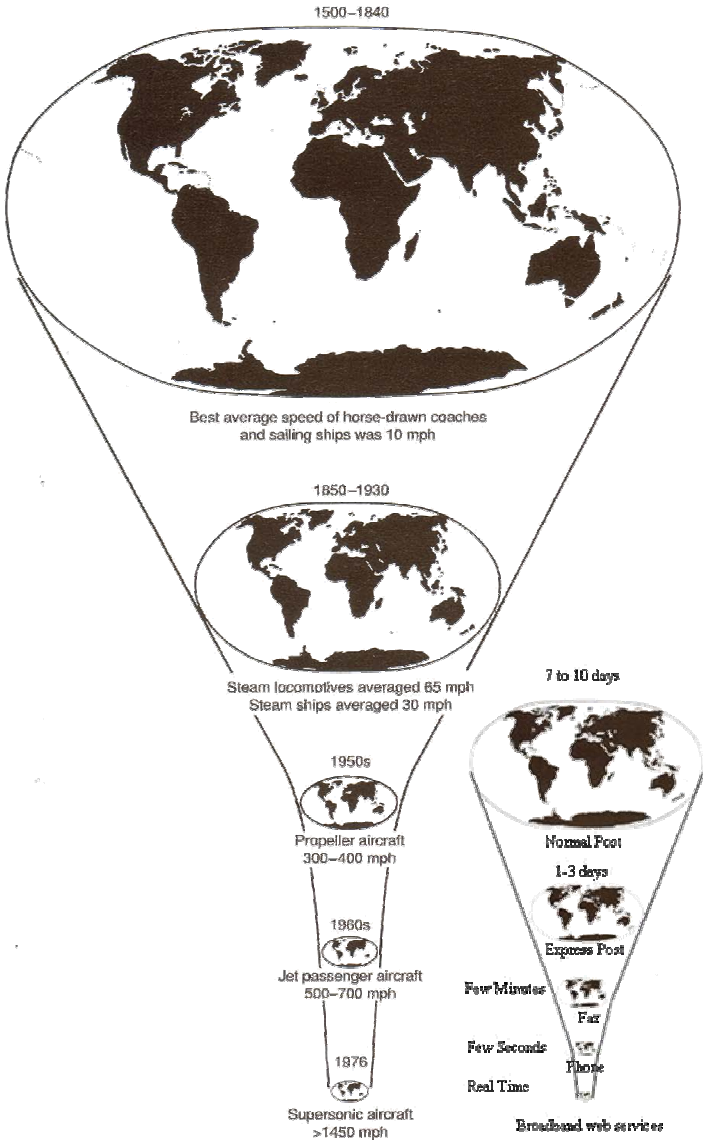
Fig: 3-3. The soft distances presented in light of the Shrinking world idea in terms of transportation (left).Source: Potter et al (2004) and in terms of contemporary telecommunications (right).
Source: adapted by the author

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[25] In the 1990s a shorter road link from downtown Cairo to the Cairo-Alexandria desert highway was constructed. Despite that this link (26th of July axis) made it shorter and easier to reach the highway, the cost was hundreds of agricultural lands that the new construction cut through.

the attention that though the world is shrinking it doesn't mean that it shares all the benefits of the global development. They argue that for the places sharing in development are those which are already well connected to the networks of accessibility, those which are eccentric to it, are massively disadvantaged.

- Antikainen et al (2001) argue that through proper and efficient transportation networks, large distances can be overcome, sometimes even creating the possibility of commuting on daily basis to and from cities in a specific region. They illustrate this idea among the cities of the Bothnian Arc network, discussed later as an example, which have great distances between some of its urban centers reaching sometimes 500 kilometers, which are overcome by shrinking the travel time (the soft distance).

In that sense, the distances between nodes are better transformed into soft distances which if shortened between the settlements of a certain region, make the engagement in a regional network possible.
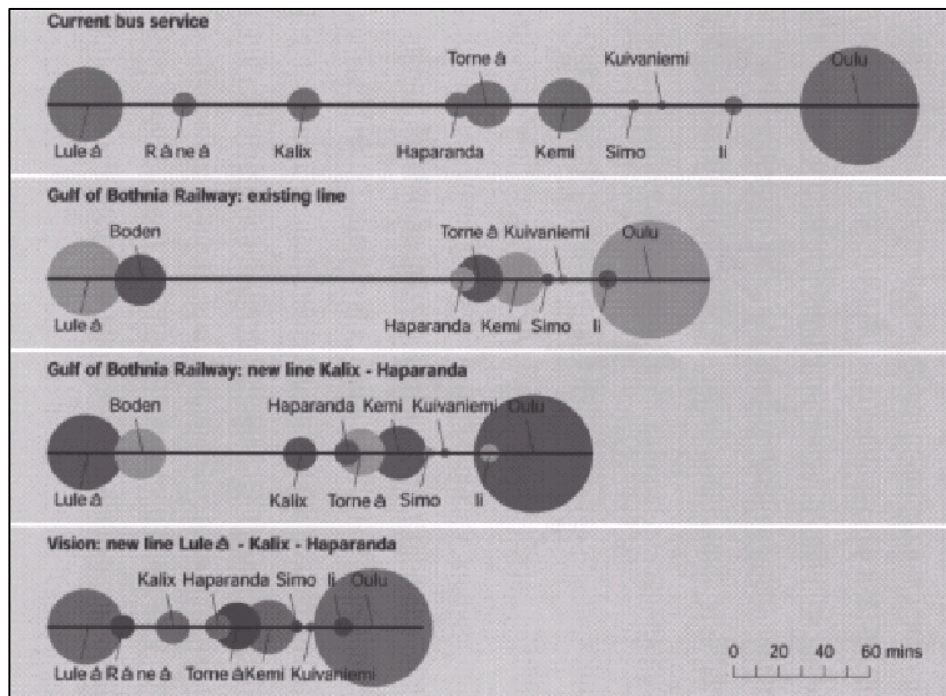
Fig.3-4.The changing soft distances between different locations in the Bothnian Arc network between Sweden and Finland
Source: Antikainen et al (2001)

ICT networks

ICT networks extend from normal phone lines passing through mobile technology and the internet, with the latest being seen as the most up to date and important telecommunication element that created the cyberspace and is considers by many as a virtual network.

However, this research consider them as a type of physical networks, since there infrastructures are physical i.e. fiber optics, wires, satellites, mobile towers and electricity systems (Graham, 2005).

Like mobility and transportation networks the ICTs are important to achieve connectivity within the settlements of a region establishing what is called real time communications, which directly impacts the possibilities of regional networking.

ICTs and networking between actors

As a matter of fact the ICT networks could be considered as a facilitating tool for interaction and networking between actors. ICTs can establish "real time" connectivity between actors regardless of their locations; this has been already done through normal communication facilities i.e. phone and fax, and now with the internet as the new communication medium for, a real-time, transfer of documents.

Another important aspect is the introduction of virtual agoras and forums that are considered new means of strengthening interactions within communities and a mechanism for discussion between actors as argued by Mitchell (1999). One however, must not assume that interaction between actors could be initiated through the cyberspace, as face to face communication is needed to build trust and understanding, which are the bases of cooperation as discussed earlier, once this is done then, communication can take place in any form.

The role of the ICTs in matters of development can support the mechanisms of some service provision as well as economical and social aspects in the following manner:
- The possibility of accessing new and distant markets as Mitchell (1999, 2000) argues, overcoming the distance factor through cyber communication. He gives the example of the farmers in rural settlements who can easily reach distant buyers in distant markets for selling their crops.
- The ICTs can help in establishing business relations, which, as Batten (1995) argues, is done through facilitating point-to-point contacts between many dispersed locations, thereby increasing the network character on different levels, regardless the relative size of the places of these businesses and the distances among them, which are becoming less important than before.

Despite the facts and arguments that the ICTs are of a supportive role in establishing regional networks between cities in cooperation for regional development, there is a debate between scholars on the role of ICTs in regional development, more specific the cyber networks, and their importance in supporting the concept of regional networking and the fostering of development in general.

Cyber networks and the development process

Some scholars are very enthusiastic regarding the role of cyber networks in achieving (regional) development in developing countries, while others do not think this is possible because many of these lack the sufficient abundance of this technology; these arguments are briefly contrasted as follows.

- Cyber networks can cause frog leaps of development for developing regions

Hewitt (2001) and Potter et al (2004) argue that through the information society the world is becoming organized in global networks; individuals and countries can escape the confines of poverty and underdevelopment by exploiting new access to information. Therefore people look at these possibilities with an optimistic view that societies can *make frog leaps* over entire stages of economic and social reorganization formerly thought to be essential for the creation of modern nations.

However, there is another opinion arguing that:

- Cyber networks as such cannot make a major change in the development process

This is well argued by several scholars and can be illustrated through the following arguments:

- Castells (1999) argues that technology per se does not solve social problems. But the availability and use of information and communication technologies are a prerequisite for economic and social development in this world.
- As a matter of fact, despite his work on the rise of the network society, and the importance of getting connected to the local and global networks to speed up development, he is very critical on the role of ICTs for developing regions to achieve development. Castells (2003) clearly answered a question on whether the net can transform isolated rural areas, provided they have access to the internet, he stated that its not possible even for developed countries to diffuse access to the internet in such areas, neither can developing countries.
- Potter et al (2004) refer to the opinion illustrated by many that reflects the unequal global distribution of communications. Without telephones and computers, areas of the developing world cannot race ahead as an outcome of the existence of technologies such as those associated with the internet, which have as well an unequal global access as illustrated in the following figure[26].
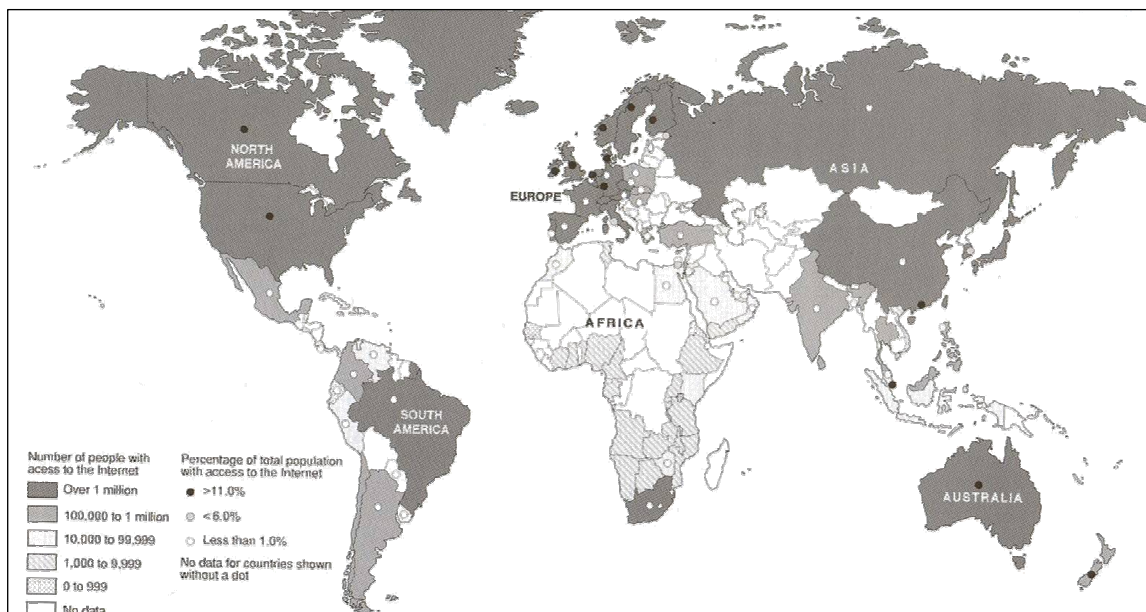
Fig.3-5: Internet users per country; percentage in relation to the total population.
Source: Potter et al (2004)

These arguments are correct; it is true that with the lack of these modern technologies the possible benefits that they could generate can not be attained. It is obvious that the main argument here is not whether the cyber networks can make a difference or not, its rather their potential integration and diffusion into the existing dynamics of the development process in developing regions that requires further elaboration.

However, it is argued that once new technologies are introduced even if they did not exist before in developing regions, their effect, would be tangible, this similarly happened with older technologies such as radio and television when they were first introduced, in other words:

- Cyber networks can still be deployed even in marginal developing regions

Several opinions would argue in favor of this statement for example:
- Graham (2002) argues that it is crucial to remember that ICTs are flexible technologies. Their powers for supporting new types of information flow,

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[26] According to the Egyptian Ministry of communication and information technologies, registered number of internet uses in Egypt is approximately 10 millions in 2007, which is more than 10% of the population.

communication, transaction and cultural experiences can be mobilized and shaped in other ways which can help to make effects on cities and human development much more progressive and positive.

- One can argue that the use of a new technology could be much cheaper and more efficient if implemented in the correct way. A classic example is the use of satellite broadcasting in India to stimulate rural development. In 1975 the Indian government initiated the SITE program. SITE (Satellite Instructional Television Experiment) was designed to test whether satellite based television services could play a role in socio-economic development. Using a US satellite, television programs were beamed down daily to about 2,400 villages in 6 states. The programs dealt with in- and out-of-school education, agricultural issues, planning and national integration. The program was fairly successful and it demonstrated the effectiveness of this (at that time) new technology in achieving development in a developing country[27].
- Besides, Mitchell (1999) states that the digital revolution unfolded in a context of established telephone and cable infrastructures, which can be readapted to serve the new technology as well, hence obtaining the service, would be easier in comparison to previous telephone services, where the infrastructure had to be installed.

From this discussion it is concluded that the use of ICT networks in the development process can be effective provided they are being deployed and employed in a proper way, it may take sometime to incorporate them within development agendas, however this had been the case with previous communication technologies.

3-4 Levels of networks

Networks can exist and be active in different levels, from the global level to the very local level, in which they are all considered spatial since all actors, resources, assets, nodes, etc are not only located in space, but also have an active role in reshaping space under its physical, biological, economic, social and political aspects. This section reviews briefly four levels of networks: Global networks, Trans-border networks, Regional networks, and City Region networks. It is important to stress that the types of networks discussed in the previous sections are valid within the different levels of networks. These levels can exist separate, or together, for example a city that functions as a node in a global network, other networks within its districts or city-regions can be exist as well, and perhaps linked to the activities of the global networks, such as the financial districts within global cities as discussed by Sassen (1991).

The aim of discussing these levels is to situate the intended network of the Egyptian case study within them, giving it a proper reference when carrying out the analysis in part three of this thesis.

3-4-1 Global networks

Friedmann (1986) gave an illustration of a global network, mapping the cities that compose it in a hierarchical representation based on their importance; this representation substantiates the concept, discussed earlier, of having a hierarchy in the network but no center. He conceived this hierarchical representation and categorization according to the economic powers of the cities, in which the core cities of the network lay at the intersection of most flows.

Friedman illustration (fig. 3-6) looks at the global networks in which its nodes, as Allen (1999) argues, are shaped by the economic power. But there are many global networks depending on the theme and actors involved, for example there are political networks, economic networks, religious networks, etc...

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[27] http://www.museum.tv/archives/etv/I/htmlI/india/india.htm , August 2004.

According to Sassen (1991) the cities forming the global networks conduct the practice of global control. It is what all the different kinds of high-level service professionals produce together which constitute the economic power of global cities. Working in close proximity to one another, the dense clustering of people and the exchange of knowledge and information enables such cities to respond to the immediacy of the markets and the general speed-up and acceleration of global economic activities. She points out that this clustering of professionals is manifested spatially in different forms, among which, is the idea of a metropolitan grid of nodes within the global city: that Is, a decentered collection of commercial and business districts forming a web of activity stretching across a region and linked together and globally by advanced telecommunications.
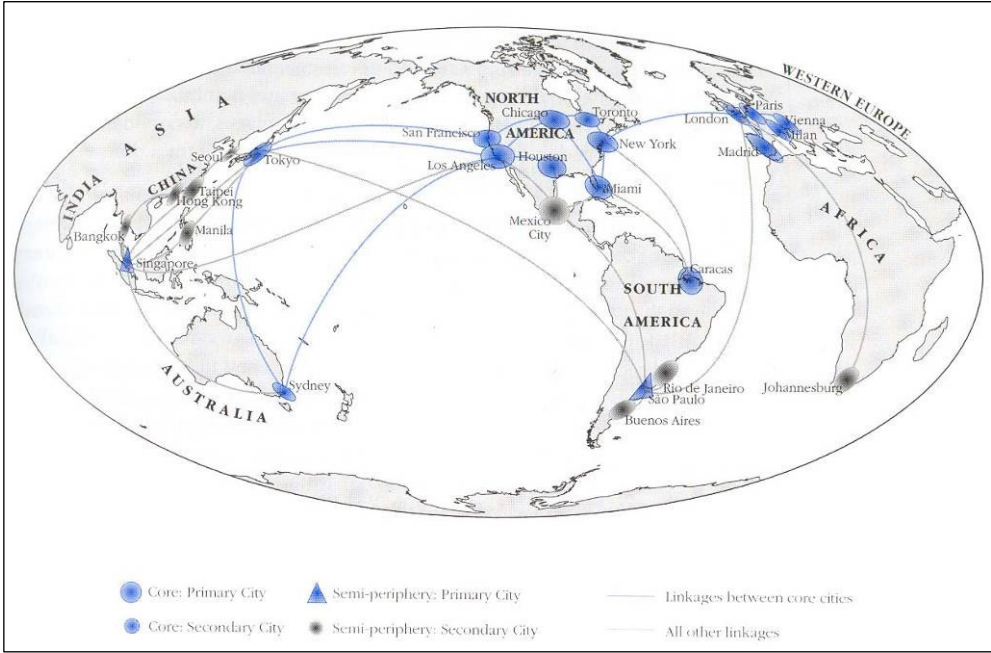
Fig.3-6.Global city networks, a hierarchical representation.
Source: Friedman (1986) cited in Allen et al (1999)

The diversification of business and the intensity of competition make the city an important place to do business. The well educated technically proficient employees and entrepreneurs stimulate the local economy and attract new activities to the global city.

She describes the spatial transformation within the global cities in which: the Business districts grow; and the old neighborhoods are redeveloped, in which the construction of hotels, convention complexes, large-scale luxury offices and residential and shopping complexes take place to meet the demands resulting from the activities of the city, consequently this leads to the identification of city regions as a new type of entity.

Fig.3-7: London Docklands a contemporary development boosting the capability of the city in the global network

This spatial manifestation is what Sassen (1991) refers to as *"the place where the globalization work gets done"*, despite the nature of the flows within the network, its actors, agents and professionals need to be located physically in such business districts. The spatial manifestation is also evident in the communication and transportation networks, which need necessary infrastructures in terms of communication hubs, international transportation hubs and the like; such manifestations hold true in the other levels of networks as well.

3-4-2 Trans-border networks

Srinivas (2005) used the term regional networks to describe the networks between different neighboring countries within the same geographic region, however, in order to distinguish this type of networks from those taking place within regions in the same country, the expression "Trans-border" networks is used, but in reality both types belong to the same level.

Trans-border networks are found and are being created in many regions of the world, such as the European Union. It is clear from the European Spatial Development Perspective (ESDP) (1999) that the concept of polycentric development has to be pursued, to ensure regionally balanced development. This concept will help in avoiding further excessive economic and demographic concentration in the core area of the EU which is also known as the blue banana referred to in the previous chapter, hence realizing the vision of the European grape.

Therefore, the aim is to create several zones of economic integration, distributed throughout the EU territory and comprising a network of internationally accessible metropolitan regions and their linked hinterland, through extensive trans-European networks of transportation, which would play a key role in improving the spatial balance in Europe.

Accordingly, the EU is encouraging the development of networks on regional levels and trans-border levels in which cooperative cross border networks can provide a means of overcoming development disadvantages in border areas. However, it should be noted that the ESDP is considered a normative study and that in reality different conditions could affect the application of its recommendations.

Examples on this type of networks could be given by the *Trans-border cooperation* among the cities of the Bothnian Arc between Sweden and Finland around the Gulf of Bothnia to foster strategic regional development, a case that is discussed in detail later in this chapter.

Another example of Trans-border networking is the proposed cooperation and networking scheme among the cities of the Benelux (Belgium, the Netherlands and Luxembourg) as illustrated in the second structural outline for the Benelux (1996). Among the aspects of this outline is to emphasize the role of intended cross-border networks, in which many of their elements are already exisiting, in the form of a chain extending from north to south through the Benelux countries so as to integrate the different activities among them.

This chain comprises advanced infrastructures and high quality economic activities and utilities, which directly affects the economic power of this international region. According to the report, the
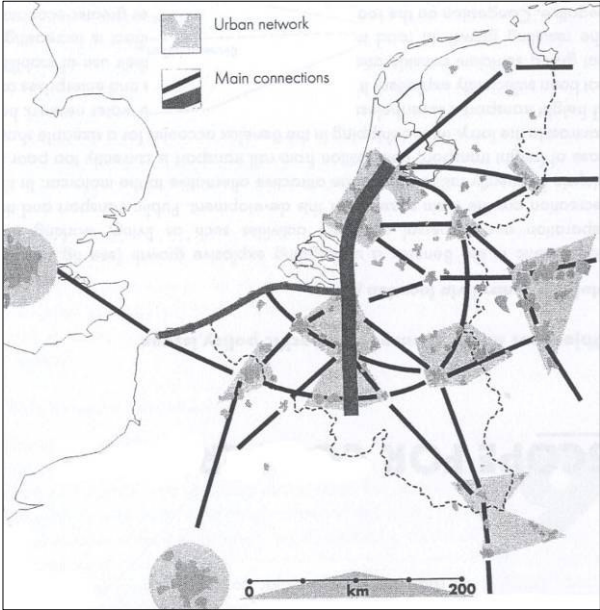
Fig.3-8: Proposed trans-border networks in the Benelux
Source: 2nd Structural outline for the Benelux (1996)

infrastructure links within these cross-border networks represent an important element of the spatial structure of the region. At the same time, these networks act as gateways and links with other larger urban networks in neighboring countries.

However, as argued in the ESDP (1999) that differing political and administrative systems can represent a barrier to such trans-border collaboration, but on the other hand, there are already several successful examples of trans-boarder networks in Europe such as the ones mentioned above. There is also the example of Saar-Lor-Lux (Saarbrücken, Metz, Luxembourg), which is characterized by remarkable cross border employment, as such trans-border networks are possible to be realized (Fig. 3-9).

The cooperation within these networks does not only seek economic development, but also cultural and social development aspects among others.

In the Mediterranean region for example, there are some networks and attempts to establish others in relation to culture, education and research between its universities and research institutions (Fig. 3-10).
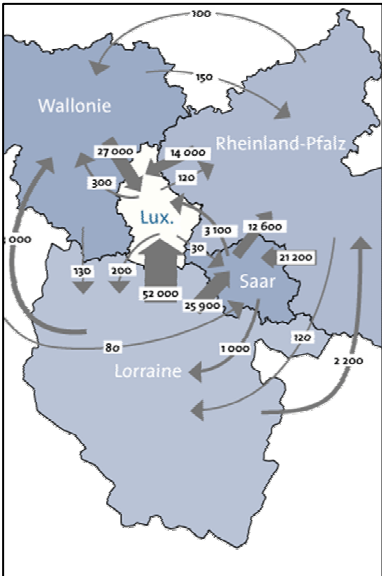
Fig.3-9: Saar-Lor-Lux and the cross border number of workers
Source: http://www.portrait.public.lu
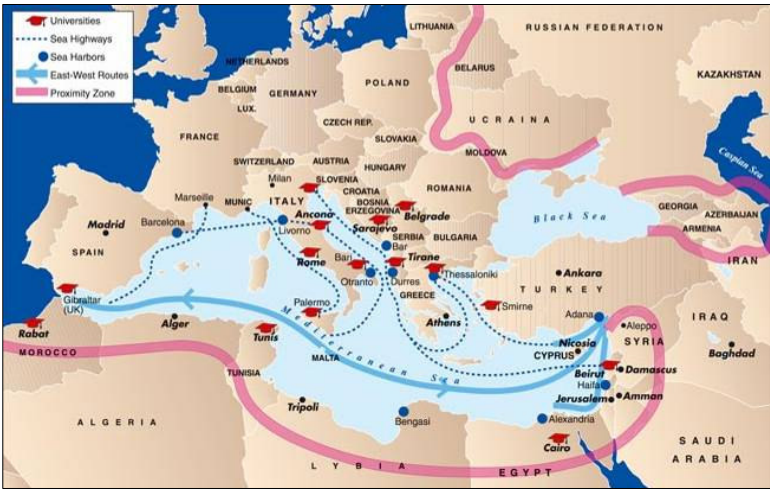
Fig.3-10: Cultural and Logistic networks in the Mediterranean region.
Source: http://www.heartland.it , August 2007.

The spatial manifestations, of such networks are similar in type but smaller in scale to those of the global networks. Transformations in the built environments and the construction of regional hubs of transportation linking different cities together across the borders are seen in many cities in different regions. Examples on these manifestations could be seen in the impacts of the TGV stations in French and European cities, where there construction caused several spin offs of urban developments to take place in their surrounding areas, e.g. the TGV stations in Lyon and Lille.

Fig. 3-11: Lille-Flanders TGV station, an example of the spatial manifestation of regional and cross border networks

3-4-3 Regional networks

In this thesis the notion of Regional Networks is used to refer to networks in a region or regions within a specific country. This level of networks is the main focus in this research which the Egyptian case study region belongs to. Several aspects in relation to this level are discussed later in several sections of this chapter.

This level of networks, in most cases, exists among cities of close proximity in a certain region, such as the networks within the countries of North Western Europe, e.g. the Randstad, the Rhine-Ruhr and the Flemish Diamond, which is only a normative and embryonic concept to date. They are also referred to as polycentric urban regions, which, as argued by Romein (2004), are composed of a "collection of historically and administratively distinct smaller and larger cities located in more or less close proximity, the larger of which do not differ significantly in terms of size or overall economic and political importance".

According to the ESDP (1999), these polycentric urban regions promote complementarity between cities and regions, hence, building on the advantages and overcoming the disadvantages of economic competition between them, eventually encouraging effective co-operation between cities built on common interests and the input of all actors and participants.

Regional networks can be formed with nodes at long distances between them, but still belong to the same country such as the Pearl River Delta network in China. In some cases some trans-border networks are closer in

Fig. 3-12: Existing and intended networks in Europe
Source: 2nd Structural outline for the Benelux (1996)

location rather than those of the regional networks. To overcome this obstacle modern and fast modes of transportation are used to reduce the travel time between cities to the minimum, a good example is that of Sweden, which had positive experience of linking medium-sized cities by high-speed trains in order to concentrate their economic potential and capacity establishing cooperation among them (ESDP, 1999).

At this point the Egyptian case study region, can be situated within the above category, i.e. within a region where the nodes composing its networks are located at large distances from each other with the shortest distance between two of its nodes is at least 180 Kilometers.

In addition to the cases of the Pearl River Delta, the Randstad and the Bothnian arc networks that are discussed later in this chapter, an example on a contemporary successful regional network could be given from the European context, which is the Emscher Park located in the Ruhr region in Germany.

The Ruhr valley of northwestern Germany, once hosted large steel and coal industries. With the restructuring of these heavy industries over the past 30 years, derelict steel works and abandoned coal mining operations spread throughout the northern region, leaving the traces of high unemployment, environmental contamination, and the remains of gigantic steel plants.

According to EPA (2006), the State Government of North Rhine-Westphalia created a regional Brownfield redevelopment approach to resolve these situations, which is considered as a higher level state initiative, as argued by Kunzmann (2006), the process is based on collaborative partnerships with seventeen local authorities, private industry, professional associations, environmental groups, unions and citizens.

Fig.3-13: Emscher Park in the Ruhr region
Source: http://202.218.20.233/san/img/Map5.jpg, August 2007

Through this collaboration the International Building Exhibition (IBA) at Emscher Park was initiated. According to Kunzmann (1990) this intervention had a solid and lasting strategy for the ecological, economic, cultural, social and urban development and renewal of the old industrial areas of the region.

In order to transform a region of massive industrial wastelands into a regional space articulated and filled with networks of open spaces, recreational and residential areas using sound ecological planning principles, 120 projects in six central working themes (IBA, 2007) had been developed and realised over an area of more than 800 square Km between the cities of Duisburg and Kamen.

According to IBA (2007) these six working themes were: restructuring and restoring of the regional landscape, sanitary regeneration of the Emscher river system, the reuse of empty spaces in the town centres for the creation of new sites for science parks, commerce and service centres, preserving the industrial monuments and transforming them into cultural, economical and social centres, the reconstruction and renovation of the housing areas, and the reuse of the vacant areas for housing development. It is to be mentioned that many job opportunities were created since many inhabitants worked in realizing the

Fig. 3-14: Piazza-Metallica at Duisburg – Nord: Redeveloping Spaces in Emscher Park
Source: www.upenn.edu/gazette/, August 2007.

projects within the above themes. What is interesting in this case is that the intervention for regional redevelopment through the six project themes was interpreted through architectural and building rehabilitation projects, which gave the region a new image through a strong spatial impact.

As, mentioned earlier, the process was a state initiative, yet, it was based on collaboration, partnership and networking among different actors; Kunzmann (2006) argues that this process proves that civil society can be motivated for partnerships rather than just relying on the intervention of public sector, therefore the success of the Emscher Park could be attributed to the success of the actor networks in it.

Another example on regional networks is given from the Belgian context, with the idea and vision of the Flemish Diamond, which according to Van den Broeck (2003) is considered a polycentric urban region[28] of a conglomerate of cities of different sizes, each with a specific character and profile. This intended urban network is referred to in the Spatial Structure Plan for Flanders (1997), which is located within the Belgian central area, of about 4000sq km and about 4 million inhabitants. The main nodes of this network are the three regional cities of Brussels, Antwerp and Ghent, all with interesting historical values, and many other smaller cities and villages.

Van den Broeck (2003) illustrates that this network, would follow the aims and concepts of the structural plan of Flanders, which are:

Fig. 3-15: De-concentrated clusters of urban functions within the Flemish Diamond
Source: ISRO (2003)

- De-concentrated clustering of urban functions that can take place in many urban areas with a different character creating very different living and working environments, and supporting economic regional development.
- Gate cities, ports, airports and high speed train stations have to be motors for economic development.
- The dense road and rail infrastructure network should be the base for the localization of activities.
- The physical structure, of the rivers and the topographical elements and also the remaining open areas, as basic structuring backbone of space and the ecological network.

According to Albrechts (1998) the Flemish central area has several assets, and indigenous potentials, in terms of spatial qualities, proper transportation networks and good investment climates among other aspects.

Fig. 3-16: The intended spatial structure of Flanders showing including the Flemish Diamond
Source: Spatial structure plan for Flanders (1997)

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[28] An urban region can also be mono-centric in case of large agglomerations like Paris, London and Tokyo.

The separate scenarios and policies that dealt earlier with this area because of their disjunction and disaccord, could not benefit from these prevailing assets. Consequently, by combining the complementarities of a network of cities, a new synergetic economic process of endogenous development will be created, and Flanders will be able to compete more effectively for inward investment within the EU. However, this network is still in the making, since there are still weak or no organizational linkages between the different urban areas (Albrechts, 1998), but at the same time, networking between the different involved actor groups is starting to take place (Van den Broeck, 2003).

3-4-4 City regions networks

In the discussion on the structure of the so called Global cities, Sassen (1991) referred to the notion of the *Metropolitan grid of nodes*, which is a decentered collection of commercial and business districts that are effectively connected by ICTs. Hence, global cities like London, Paris and NewYork include within their structure this kind of inter-city networks.

Kunzmann (1997) illustrates the emergence of specialized spatial – territorial complexes; within the districts of the city with a particular specialization e.g. automobile industry or IT that dominate activities and policies in a certain territory. He labels this as a *patchwork city region* of different activities that are complementing each other. Silicon Valley in California and Sophia Antipolis in Nice are good examples since they are both based on Research and Development activities, in which different companies and organizations complement each other in different production processes.
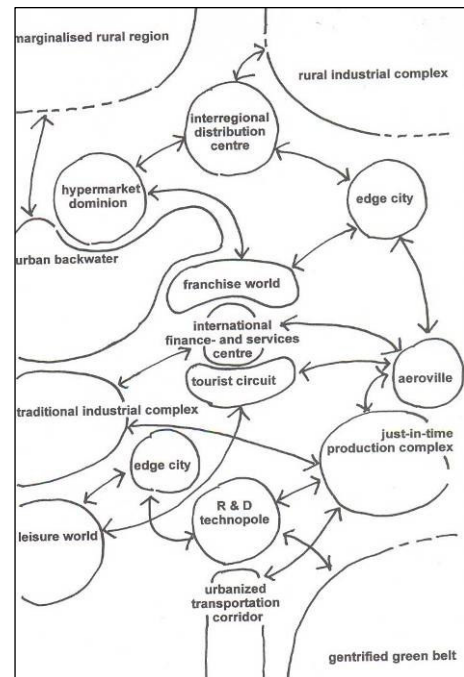
Fig: 3-17 Patchwork city region
Source: Kunzmann (1997)

Part II: Reflections on networking and networks

This part reflects on the concepts of networking and networks, by discussing four important aspects, these are: 1) the differences between hierarchy and networks, 2) the effects of networking and networks on regional development, 3) the success factors for their application and 4) the spatial impacts of networking and networks are discussed and highlighted.

3-5 Hierarchy and networks

This section attempts to discuss the differences between "hierarchy" and "networks", in terms of spatial functional relationships between the settlements of a specific region i.e. service provision, and activities on one hand, since the issue of service provision is tackled in part three in chapter six. On the other hand, the organizational relationships within the related actors in a region are tackled as well. Some of these relationships have been already tackled when actor networks were discussed earlier, the aim here is to stress on the differences between hierarchical relationships and networks. It should be taken into consideration that in real life situations, hierarchies and networks usually exist and function in a hybrid form.

3-5-1 Spatial functional relationships among human settlements

A good study on the hierarchy and networks concerning the functional relationships between human settlements from the *spatial perspective* is that of Dematteis (1996) who makes reference to three models:

- ***Core-periphery hierarchy,*** which describes a spatially polarized urban system with a number of hierarchical levels of centrality. Accordingly, the higher level central places tend to be concentrated in a core area, while those at successive lower levels are distributed in peripheral belts. This model is typical for the effects of the Fordist industrial economy, which is characterized by scale and agglomeration economics causing such spatial polarization effects, hence most of the economic activities and the more specialized services are located around the core area.

- ***The central place model***, i.e. *"Christaller networks"* in which the settlements system is a hierarchical multi-level nested gravity system, where the central places tend to be equally distributed. Each central place with its complementary area forms a self-contained subsystem in regards to the services and functions of its hierarchical level. The links between the central places are vertical links of hierarchical dependency. This model represents the situation of equilibrium, typical to a pre-industrial market.

- ***Multi-level interconnected networks,*** which refers to spatially distributed systems, in which the links between the central places depend on horizontal and vertical functional complementarity. As such, a central place of a given level can have non hierarchical horizontal links with other central places of the same level, and vertical links with other places of higher or lower level, when functional relations are considered.

Core-periphery hierarchy

Central place model

Networks
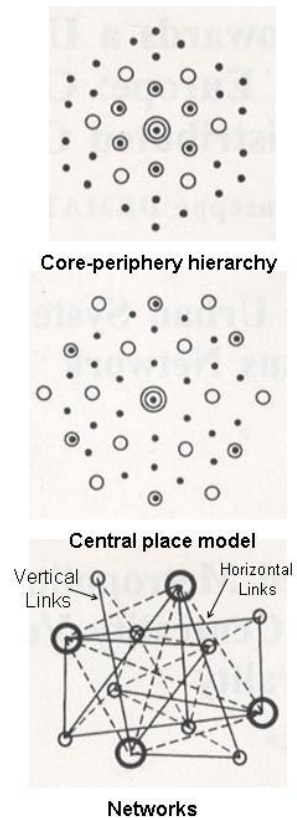
Fig.3-18: Spatial models of settlements
Source: Dematties (1996)

This study is interested in the third model, which acknowledges both the vertical and horizontal relationships between the settlements, an aspect that is further elaborated through the study and reflected on the Egyptian case study in part three of this research.

It is argued that functional networks are not replacing the hierarchical systems of settlements; in reality, most of the time they exist in a hybrid way, but sometimes they can exist apart from each other depending on the regional and contextual settings. Hence, the functional relationship between the settlements in the regional system could be one of the following cases:

- Each of the urban settlements could have a specific function i.e. activity or service that complements the other settlements interdependently; then a network system would prevail on the regional level. Noting the statement of Castells (1996), were some settlements would be more specialized in certain functions, and would be of higher ranking than other settlements, yet, still depending on the functions provided by the other "lower" rank centers in the network.

- Most of the cities in a region might be of a small size and of relative similar strength, which practically make it difficult for one of them to functionally dominate; therefore the alternative is a convenient network model. A good example is the case of the Rhône-Alpes region in France that consists of cities of similar size like Grenoble, Lyon and Saint- Etienne, where the strategic approach was focused on establishing a regional network[29]. This however, does not mean that vertical relationships within such a model does not exist, as a matter of fact the configurations within the regional settlements system would be similar to the third model described by Dematteis.

- A mainly hierarchical relationship prevails in the case of rural communities or dormitory settlements, where they depend totally on the services provided by urban centers or larger rural settlements in terms of services' provision, which is the traditional functional relationship between rural and urban settlements.

Fig.3-19.The system of urban settlements in the Rhône-Alpes region
Source: http://www.ac-grenoble.fr

- That does not mean that the rural settlements always play the role of the dependant parties, in some cases, groups of villages would engage in one form of cooperation and pooling of resources. As shown by Durmus (2003) in Turkey the so called Köykent project (village town projects) anticipates combining the potentials of a group of adjacent villages by forming mutual co-operation for the development process. The current pilot project that is being implemented in some villages relies on a networked form, where nine villages coordinated their resources to constitute a confederation sharing infrastructure, water networks, social and cultural centers and other facilities[30].

To sum up, networks are not replacing hierarchies; on the contrary, both of them exist mostly in an interrelated configuration.

3-5-2 Organizational relationships among actors

In an earlier section, networking between actors has been tackled and studied, showing the key success factors of such networks together with some critical views on networking.

This section attempts to give a brief distinction between hierarchical organizations and networking between actors, not forgetting that there is a third type of political structures that govern modern societies which is the markets. Thus the attempt is to show where networking stands between hierarchies and markets.

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[29] The idea of a network within the region of Rhône-Alpes region is advocated by Mick Dunford (1995) in Dunford, Mick, 1995, Rhône-Alpes: a dynamic region in an age of crisis in Rhodes, Martin (ed), 1995, The regions and the new Europe.

[30] The original proposal of the project that was initiated in 1977 was based on the assembly of a number of villages around a more central one to produce and provide more efficient public services; in that sense the relationship here among these villages is a hierarchical one.

Many scholars looked at these three structures in relation to the organization of firms, later; their research influenced and was extended to the domains of planning and governance. For example the work of Grabher (1993) who showed that networks have come to be seen as a salient form of economic organization, as entities intermediate between the hierarchical and vertical relations of authority within firms and the horizontal, specific and low commitment relationships of markets.

The Markets

Low (2005) using some of the work of Ansell 2000 points out that the social relations of markets center on the contract in which exchange take place according to a matrix of legally binding promises among formal equals. Markets are characterized by discrete exchanges in which goods and values to be exchanged are carefully measured. The parties of the exchange are well defined and act authoritatively on the agreed terms. Markets are also impersonal and the parties' knowledge of one another is limited. What is central in the markets is the legally binding contract between the parties to any exchange.

The Hierarchy

Low (2005) describes a hierarchical relationship to be characterized by a vertical form of organization with the strategic "thinking" part at the top, while operatives at the bottom of the chains of command suffer from "structured ignorance" limited to narrowly specific routine tasks, which is rather an extreme description. Beauregard (2005) critically argues that hierarchies are viewed as rigid entities that channel authority, obstruct the flow of ideas, and withhold innovation. Accordingly the social relationships are organized through structures of command and obedience, since actors carry out designated functions in exchange for a variety of positional distinctive rewards.

The main problems within hierarchies are to coordinate the efforts made at the various levels, and to make the individuals and agencies at the same level act in unison (Sager and Ravlum, 2005), such settings are considered a ripe environment to stimulate bureaucracy and corruption. At the same time, within such relationships, a large group of actors from the civil society are marginalized, in some cases matters are only handled within government hierarchies.

Until recently relationships within the government levels in Egypt, were based on a hierarchical top-down settings, where the lower levels of the government had to carry out the routine tasks and the outcome of the thinking done by the central government, while the relationship among the government and other actors was blurred, this is further discussed in chapter five when the Egyptian system is analyzed.

Networks

Among the actors of civil society, the social relations of the network combine a sense of equality with a sense of mutual obligation that is not; however, normally legally binding; Low (2005) argues that actors in a network exchange information, political support, and trust, this is because the absence of contractual exchange must mean that mutual trust plays a more significant role in networks than markets, though it is far from lacking in the former.

Perhaps another difference between markets and networks is related to the clarity of exchange and goods, in markets because of contract, there is a clear known value on the goods exchanges, while in networks this is sometimes ambiguous, there is no written contract, hence, in many cases there is no clear definition.

In terms of communication between actors, Grabher and Stark (1997) show that in networks there is a strong social communication between actors, forming two possible types in terms of relationships, the first one would be a tightly knit network, in which almost all actors know each other, while the second would be the loosely coupled networks, which have less direct

relations between their actors. He warns that the tightly knit networks are less effective, since the circle of learning and exchanging experiences is limited with the actors who already have been dealing with each other for a significant time, as opposed with the loosely coupled networks whose actors are open for learning from each other and working for creative ideas.

Nevertheless, it is not a simple process on getting all the actors to agree on a common goal and to resolve their disputes and concerns regarding the agendas of the different networks, it is also important to remind the reader with the aspect of power governing the relationships between the actors together with the concepts of inclusion and exclusion by the networks as seen from the earlier discussion on the actors' networks.

In terms of governance

Networking within governance or the *networked polity* is a structure of governance in which both state and societal organization are vertically and horizontally disaggregated but linked together by cooperative exchange. This is explained by (Low (2005) with the work of Ansell (2000), he argues that knowledge and initiative are decentralized and widely distributed. Horizontal relationships are at least as important as vertical relationships. Exchange is diffuse and social rather than discrete and impersonal.

The logic of governance emphasizes the bringing together of unique configurations of actors around specific projects oriented toward integrative solutions rather than dedicated programs. Hence, the relationship within the different levels of government would be of "mutual adjustment" rather than command, within networked settings the lower level units communicate with higher levels where they are granted more discretion, and there is an increased emphasis on projects on which multifunctional teams work, rather than programs in which staff are dictated to routine tasks.

However, even within the levels of government, the critical aspects on networking remain valid such as problems of exclusion and the emphasis of power on the related actors. In that sense, it is argued that such networks should be monitored by the governmental hierarchical bodies, just to ensure that the voices of all actors are heard in other words, to ensure the legitimacy of actions and decision taken in the network in a democratic way. However, it should be taken into consideration that the monitoring role should not turn into domination by the state agents over the network[31].

Another critical point shown by Low (2005) is that there is an advantage of a hierarchy for democracy that is the trail of accountability leads with reasonable transparency to an elected official in contrast with a networked polity where this trail becomes confused.

Grabher and Stark (1997) hint for another but related interesting aspect, that sometimes in contrast to the essentialist categories of private versus state property; the recombinant practices of involving state and private sector actors together create networks of horizontal ties of cross ownership intertwined with vertical ties of nested holdings in which the boundaries between state and private property are increasingly blurred. With the existence of vertical relationships in such settings it is implied that hierarchies are in fact present even with the existence of networking, the ranks of the actors and levels of government would still follow some sort of hierarchical arrangements. This is substantiated by Sager and Ravlum (2005) who argue that hierarchies and networks can be intertwined. Hierarchical organizations can be found in wider networks while network-like relationships are emerging within and across the boundaries of hierarchical structures[32].

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[31] This is based on a discussion with Prof. Van den Broeck in January 2008.

[32] See the related discussion on section 3-5-1 with the title State/Public actors as agents in the networks

3-6 Effects of networking and networks on regional development

One of the main issues that this thesis is concerned with is the reasons for using networking and networks in regional development. The question that should be answered here is "Why networking and networks should be considered in the regional development process?" To some scholars networking is not only a tool for regional development, it is part of it. Perhaps the best way to answer this question is simply to show the effects of networking and networks on regional development. However, it should be taken into consideration that the arguments given to substantiate these views do not only come from planning, but also from socio-economic and management disciplines related to regional development.

Based on the related literature review, one can mention some of the possible effects of networking and networks in achieving regional development, which help in:
- Causing collaboration within the involved parties in regional development,
- reducing uncertainties related to development attempts, by sharing the possible risks,
- pooling of resources, which leads to gathering sufficient development capacities to confront regional problems and disparities,
- creating new development potentials by sustaining innovation through knowledge exchange and inter-learning within the organizations and actors of a certain region,
- producing projects for regional development by getting ideas off the ground,
- and increasing the spatial diffusion of development over the region.

These effects are tackled briefly as follows.

3-6-1 Collaboration for regional development

To some scholars, the old fashioned view of centralized rational economic decision making has become obsolete, as reflected by Booher and Innes (2001), they argue that what is emerging instead is an adaptable organization based upon teams engaged in dialogue, collaboration, and the development of shared meanings. This change is taking place within organizations and firms in general, but also is reflected on the institutions and organizations involved in regional development.

Networks contribute to regional development by supporting collaboration between different actors, organizations and institutions involved in regional development, as argued by Martinez- Fernandez (2001). Therefore, she considers regional networks for development as strategic alliances of private and public sectors, civic sector, NGOs, etc brought together through networking trying to achieve the objective of the (economic) development of the region, these alliances are based on collaboration and in many cases the concern of the actors involved in the regional networks is geared not only towards the economic development of the region but also towards the development of its communities and enhancing their quality of life.

3-6-2 Reducing uncertainties related to development attempts

Through the above networking and collaboration, actors and organizations involved in regional networks reduce the uncertainty in going ahead with the development projects as they realize that they are sharing the risks and collaborating against rapidly changing environment argues Koroglu (2004). Martinez- Fernandez (2001) shares a similar point of view as she hints that a region is better prepared to deal with change and uncertainty, if its actors and organizations are involved in networking and forming regional networks, through which they establish links to foster collaboration, spread the knowledge and are ready to make

unified efforts and proceed with development projects after knowing that they will share collectively any possible risks.

3-6-3 Pooling of resources to confront regional problems and disparities

Through gathering the actors and agents in the region in a state of networking and collaboration in which they accept to share together the possible risks, they become willing to pool the regional resources to use them in confronting regional problems and disparities and invest them in development projects.

Chisholm (1996) sees that networks should deal with complex and interrelated problems and regional disparities such as unemployment, lack of enterprises, economic decline, migration, lack of investments, etc. Thus among the important functions of networks is opening the doors to resources and knowledge necessary for development, and to pool together complimentary resources which a single entity (actor or organization) can not have (Koroglu, 2004). Albrechts et al (2003) elaborate on this concept as they argue that certain settlements and urban areas according to their functions and positions are components of a larger whole; through networks, as one coherent structure, the potentialities of the separate elements are exploited better with possible complementary and harmonized regional development.

Consequently, as argued by Antikainen et al (2001), it would be possible through this pooling to secure resources for the less developed settlements, which they would not otherwise obtain. Networks creates benefits of synergy, clarify the division of labor and improve connections both physically and organizationally, hence, it is possible for more settlements to *gather sufficient development capacity*. Resources in that sense include not only natural and economic resources but also human and technological ones among others; for example in some cases, the pooling of local labor markets may solve a situation of unemployment in one area of the region and scarcity of workers in another (Meijers and Romein, 2002).

Pooling of resources enhances the competitive assets of the region as a whole in comparison to other regions rather than the competitive assets of individual cities, this pooling would also include functions. In support of this, Meijers and Romein (2002) argue that competition between individual cities to achieve an image to attract investors, professional workers, and tourists, may leave unutilized opportunities that are offered by the larger regional system or may even lead to duplications. Hence, instead of duplicating the functions of different cities within the region, it is more effective if they cooperate together to *achieve significant scope economics* as discussed by Batten (1995). This is done through functional specializations between the cities of a region; as such the whole region offers a broader package of quality services, activities, housing, etc. These services may be advanced producer services; educational and research institutes; specialized types of retail; recreation, leisure and cultural facilities; and residential environments (*ibid*).

3-6-4 Creating new development potentials by sustaining innovation

From a certain perspective, innovation is an important contribution of networks for regional development, through which several choices and answers are given to exiting regional questions and problems. Booher and Innes (2001) consider that the strength of networks or what they call the network power emerges as diverse participants in a network focus on developing shared meanings which allows them to identify and build on their interdependencies to create new potentials through innovations and new responses to existing problems and stresses, in such a way to improve the choices available to them. They argue

that the choices available to individuals through participation in network collaborations can be wider and more attractive than what can be gained from central directions that are subject to traditional power struggles. In doing so, the actors involved in the networks can move on to develop ways to address the problems that they could not individually face because of their shortage of resources and perspectives. However, as warned earlier, one should not forget the real life settings of power within different actors in the network; for sure several points of views will be heard as most likely equal actors exist, but at the same time the views of weaker actors might be bypassed to realize the agenda of the powerful ones.

These choices and potentials are generated through innovation, mutual learning and knowledge exchange within the members and the institutions in the networks which plays an important and crucial role in regional development (Martinez-Fernandez, 2001 and Koroglu (2004).

3-6-5 Producing projects for regional development

By achieving innovation, inter-learning and knowledge transfer, regional networks can thus have an influence on the regional strategic planning and the coordination of strategies in such a way to get the innovative ideas off the ground and produce projects to implement these strategies. Martinez-Fernandez (2001) argues that regional networks can have an influence on the regional strategic planning and the coordination of strategies and development projects while taking into account the demands and pressure of government ideologies, social groups and the private sector; she warns however from the relationship with the central governments. They have in most cases the superior position in relation to funding, for that reason sometimes central governments would consider themselves the holder of greater knowledge and look to the other actors in the regional networks not as equals but as local resources for the coordination process. Should this take place, then there is a risk that the approach to regional development would still follow the top down approach, but if the government agencies are flexible and highly interactive, then the relationship with other actors and organizations will be of interdependence and collaboration.

3-6-6 Spatial diffusion of regional development

Taking into consideration the above mentioned aspects, it is argued that they would lead to another important outcome, that is regional development becomes spatially diffused on the whole region, rather than being concentrated in a specific center or centers (fig. 3-25), and pending on the downwards diffusion of development discussed in chapter two.

This is explained by Dematteis (1996), who sees that networks could actually cause a process of re-equilibrium in regions that are currently based on the core-periphery relationships or even those that are characterized by hierarchical decentralization such as the regions relying on the growth poles as an approach for regional development.
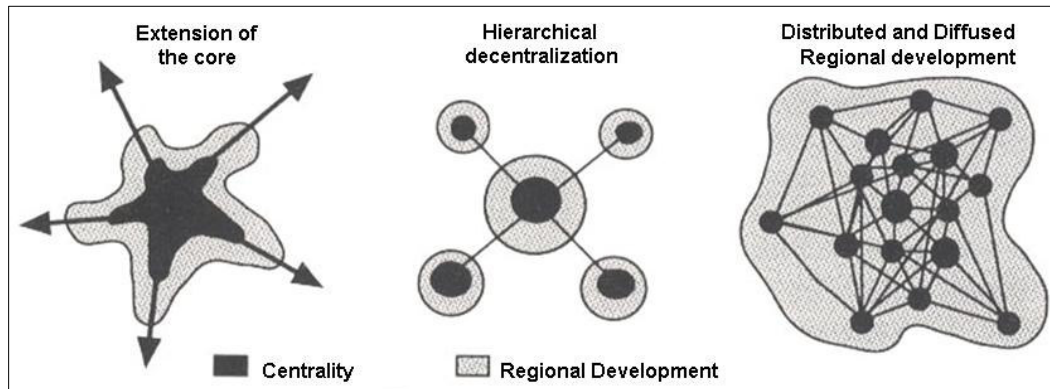
Fig.3-20: Spatial diffusion of regional development caused by networks opposed to the other models.
Source: Adapted from Dematteis (1996)

3-7 Success factors

The presence of the three types of networks discussed earlier is considered essential for the success of a regional network. As discussed later, these three types are strongly related to each other, where the actor networks sets the policies and strategies to be carried out and realized through the functional networks, which are all supported by adequate physical networks, this notion is further developed into a framework of analysis at the end of this chapter.

As discussed earlier, the support of the physical networks is essential for the success of regional networks seeking regional developed; so as the presence of opportunities and assets to be utilized within functional networks. However, the capability of actor networks in setting the development policies and agendas is crucial, which even if some elements are missing from the two other types of networks, through the policies and decisions made by the actor networks, they can be substantiated. Due to their importance, the success factors for actor networks are further discussed in this section.

The factors and conditions discussed here are mainly based on discussions with Prof. Van den Broeck in summer 2007, the work of Booher and Innes (2001) and the work of Albrechts and Van den Broeck (2004), which deals with the case study of the ROM project in the Ghent Canal Zone in Belgium. The case describes the process of networking and establishment of networks with the involved actor groups to develop an integrated area focused strategic plan, in which problems were solved by developing consensus and deciding on common actions among the actor groups of different scales and levels

According to the above sources, it is argued that for actor networks to function in a productive way, their actors need a *certain trust* towards each other to cooperate together, they would also need someone among them to act as an *initiator* and mediator in relation to development aspects, and finally they need to make *pacts* through which they accept the reached development policies agreeing on implementing them including of course the government representatives. These elements are discussed briefly as follows.

3-7-1 Trust

The arguments on the importance of trust among actors go back to social capital theory and the theories of economic sociology. For example Van Ark and Edelenbos (2005) argue that trust enhances the chances for cooperation between actors from different groups as it reduces the uncertainty of the actions of other actors. Consequently, the relationship between actors becomes more smoothly as they know what to expect from each other, becoming less afraid of handing business to others without installing control mechanisms, eventually leading to mutual commitment and a greater inclination to cooperate in a stable and durable manner in the network.

Booher and Innes (2001) argue that actors must be confident that the other actors are not defecting and that they could detect defections if they occurred, therefore availability of feedback about the behavior of other actors in the network is necessary.

3-7-2 A Director

It is argued that in order to have a successful actor network there should be a *trusted* actor among them who would have the role of a director, or as called by Bryson and Roering (1988) the process champion, who steers and stimulates different issues related to development thus engaging the whole network in tackling these issues to reach agreements regarding development policies. This actor would also act as a mediator who resolves possible conflicts that would rise among different actors; therefore s/he should also have political powers and influences on the representatives of local and regional governments since they would be involved as well in the network[33].

In a case discussed by van Ark and Edelenbos (2005) it is argued that a civil servant would be suitable to take the role of a director. From their experience in a case in the Netherlands, a civil servant had the role of a catalyst in a collaborative planning process, where he brought people together for cooperation, resolved the conflicts that took place in the process, and created a moral binding between the parties involved, accordingly a civil servant might be the director of the actor network. However, it should be taken into consideration that this can be a sensitive role for a civil servant, as s/he could be caught in vertical sectorial networks and could possibly be influenced in his mediation; thus a civil servant may not be the optimum director in all cases, and should be selected carefully.

The director can also act as an initiator for ideas and initiatives within the network, however, any other actor at any time can act as an initiator should s/he has an idea to be considered.

3-7-3 Role of pacts

Networking between actors is based on informal relationships and cooperation; the policies and visions that are reached would be based initially on trust as discussed above and not on legal bindings. This is represented as a pact, as discussed by van Ark and Edelenbos (2005)**,** which constitutes trust among the actors involved because they believe one can break the agreements only at great expense. They call this pact "The regional agreements" which is a non-statutory plan that is independent of administrative boundaries and scales, and a commitment package between stakeholders about the spatial development of a region. By signing these regional agreements, the parties involved show their commitment to the plan, the measures to be taken and their individual contributions. They would therefore transfer the commitments of the pact to be carried out within the organizations they represent, by putting them into effect through means of formal planning documents. In such a way, the actor network would have an informal-formal status: informal because initially the agreement is reached between actors with no legal binding and formal because through transforming this agreement into official planning documents, the agreement reached could be implemented through the governmental bodies, hence, fulfilling the commitments of their representative actors; this concept is reflected in the work of Albrechts and Van den Broeck (2004) and Van den Broeck (1996).

This could be the starting point, but the actor networks should gain a clear organizational status as the network develops, from just a platform that relies on pacts and regional agreements, carried out on the base of personal commitments, to a development agency.

This would transform the informal/formal status into a formal one and be legally committed in carrying out the development visions set by the actor networks[34].

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[33] These arguments are based on a discussion with Prof. Van den Broeck in March 2007.

[34] This is based also on a discussion with Prof. Van den Broeck in June 2007.

3-7-4 Network power

Network power is defined by Booher and Innes (2001) as the resulting life force of patterned action, learning, adaptation, and reproduction; it emerges from communication and collaboration among individuals, agencies, and businesses in a society. They argue that for network power to emerge in a significant way, three basic conditions must be in place:

The first is that the actors in the network should be ***diverse*** in a way that is consistent with the full range of interests and knowledge relevant to the issues at hand, as such diversity is considered the source of raw material as it brings together ideas, values, interests and knowledge into a new fabric. It provides a wide range of resources, information, personalities, experiences, and points of view that become the materials for innovation and learning.

The second condition is that actors be in a situation where their ability to fulfill their interests depends on each others' actions, each must have something others want and each must have something others can offer them. This ***interdependence*** is the source of power that brings actors together and holds them in the network system.

The third condition is ***authentic dialogue***; since it is critical that participants in the network engage in a form of discourse where all are empowered and informed and where sincerity, legitimacy and accuracy of what people say can be judged; such dialogue provides structure within which actors can process their diversity and interdependence.

In addition to the above mentioned key factors for the success of a network, Van den Broeck (2003) illustrates other general factors that should be taken into consideration, these are:
- the choice of a restricted package of key issues,
- gathering all involved stakeholders,
- having a flexible but clear process,
- having a professional management and a trusted process director,
- building social support,
- and most of all the willingness to cooperate.

One of the concerns, discussed earlier in section 3-3-1 on actor networks, is that in terms of power, the actor in a network are almost never equal when it comes to the powers they have, this might cause conflicts to arise when the interests of weaker actors are overlooked. However, what could be considered as a success factor, if occurred, is that the difference in the powers of actors are not too large, eventually all the interests are discussed, hence minimizing the possibilities of conflicts; though one must admit that this is not often the case in real life.

3-8 Spatial impacts of networking and networks

Space is considered an important component to networking and networks as shown in their definition and their framework of analysis, and by space not only the space related to the location of nodes and links of the regional networks but the whole regional landscape. A typical question usually evolves when dealing with networking that is: *what are the spatial impacts of networking on the regions and the human settlements involved in it?*

In terms of human nature, people need space to socially manifest and express themselves, as debated earlier in this chapter, through people's intervention they change space into places of different functions and activities, consequently, with their involvement in networking and their formation of networks, several impacts on space would take place.

A starting argument in regards to this question is of Albrechts et al (2003) who argue that the rise of the network society has an effect on the use and planning of space. The rise of different activities that have a network like character with changing functional relations will also change the pattern and behavior in space.

At the same time there is no clear formula that explains the relationship between networking in the society and spatial transformations, in addition to the shortage of reflections on space in most of the literature dealing with networking and networks, especially that which stems from the social science domains. However, within the next few sections an attempt is made to highlight and reflect on some of the expected spatial impacts of networking, with the full realization that there are many other possible spatial impacts that can take place depending on contextual settings and factors. Only three of these impacts were possible to define, through the work done in this thesis, with three keywords: Needs, Redefinitions, and Emergences.

3-8-1 Needs for space

The needs for space evolve because of different reasons and factors, it was possible to define three of these reasons, presented as follows:

Need for space because of activities

As discussed earlier, regional networks are based on collaboration and cooperation through functional specialization, as a result, these activities are subject to growth, and the need for more supporting services; which is reflected physically in the need of more space to intake its hosting buildings and facilities.

In the case of the Randstad, which is a case of existing functional network (discussed later in this chapter), the growth of activities together with the increase and attraction of population in its cities led to their spatial expansion, threatening the green heart of the region, because of the increasing need for space to accommodate this growth (Berkelbach, 1997). Another example is given from both ports of Rotterdam and Hong Kong; which are involved in two networks that are the Randstad and the Pearl River Delta (PRD) respectively(discussed in the next section), due to the increase of flows of goods and people passing through them, especially the increase in freight activities, they require more and more port facilities and supporting

Fig.3-21: Space requirements for the increasing facilities and support services are met by reusing existing space in Rotterdam
Source: http://www.intersupply.org , August 2007

services, which in turn need space to host them, in the case of Rotterdam for example the need for space is met by reusing the existing space and transforming its functions[35].

Need for space for accessibility and connectivity

Physical networks, both transportation infrastructures and ICTs, are of extreme importance in establishing regional networks. In terms of *ICTs*, it is argued that their need for space is limited, with the exception of few logistic setups.

The supporting infrastructures are almost invisible and in many cases simply occupy the space of former technologies; however, they may eventually cause transformations in the urban pattern.

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[35] Based on the comment of Professor André Loeckx (October, 2007).

This argument is discussed by both Mitchell and Graham. Mitchell (1999) argues that ICT networks will not create entirely new urban patterns from the ground up; they will begin by morphing existing ones and refashion the urban patterns that emerged from the current transformation. Graham (1999) substantiates this argument by stating that in many cases optic fibers are extended through older networks of ducts that are literally deep underground within old urban cores. He gives the example of Mercury's fiber grid in London's financial district, which uses the ducts of a long-forgotten, 19th-century, hydraulic

Fig: 3-22: The Haiyin Bridge linking Shenzhen and Hong Kong in the PRD
Source http://www.chinadaily.com.cn/bizchina/2006-05/16/content_592217.htm , August 2007

power network. Other operators thread optic fibers along rail, road, canal and other conduits.

As for *transportation networks* they can have obvious spatial impacts. The need for space to expand infrastructures for the different transportation networks, e.g. road networks and railways to sustain accessibility and mobility with the nodes of the network, is already evident. An example from the PRD case is the construction of a new bridge to link between the cities of Shenzhen and Hong Kong that are considered important nodes in the network over the Shenzhen bay to achieve accessibility and connectivity, which is a clear spatial impact.

Another impact could be seen in the expansion of transportation hubs that are considered intersection nodes for different means of transportation. This could be seen in many railways stations, as discussed earlier with the examples of Lyon and Lille TGV stations; but also with large airports, which act as hubs for airlines, railways and bus transportation. Examples on such airports are those of Brussels, Frankfurt and Schiphol airports. Usually these hubs stimulate the agglomeration of different supporting activities like hotels, corporate headquarters, office-buildings and shopping centers, which in turn leads to the redefinition and rearrangement of space surrounding these hubs. Accordingly, the need for space comes in two folds;

Fig.3-23: One of the supporting facilities next to Brussels airport, the NH Brussels airport hotel emerged as among the agglomeration of supporting activities stimulated by the presence of the airport as an international hub.

the first is the space needed to host this agglomeration of activities, while the second is the space needed by the hub itself to expand its capacity, for example more runways for the airports (e.g. the expansion in Schiphol airport) and more platforms for railways, to accommodate the increasing rate of flows.

Need for space because of housing needs

It is argued that the regional development achieved from networking might result in setting a state of attractiveness to the region it is applied to, as more employment opportunities and expansion in activities takes place. As such, migration to the region might occur, which results in a need for more housing and other facilities to accommodate the growing population. This is considered a hypothesis at this moment rather than a fact, however, a good

evidence from the PRD supports this argument, which of course needs more substantiation in further research.

In the PRD case; there was initially a massive inflow of work force from all over China, in which factory and construction workers were housed by building dormitory compounds[36].

Currently with shortage of workforce that is taking place in the PRD, which according to the 2004 estimates is two million workers short, this is reported as a result of low salaries and bad conditions (including housing), proper housing facilities are now considered incentives to attract people to work within the PRD. According to Fong (2004), more manufacturers are pushed to offer better working conditions in order to retain staff, including building facilities with previously

Fig.3-24: Dormitory housing in China for the migrant workers, a spatial impact.
Source: http://www.sptimes.com/2005/09/18/china-gallery/page2.shtml , August 2007.

unheard-of luxuries like swimming pools, dormitories equipped with television sets, as well as libraries, and gymnasiums.

Another argument to support the above hypothesis is that of Sassen (1991), who argues that growing activities within cities involved in networks attract professional elites to these cities, who require high level residential districts, as well as other facilities such as shopping malls and so forth suitable for their living standards, accordingly, these high level residential districts are either emerging as a result of transforming older districts, or by constructing new housing districts (her argument is based on global

Fig.3-25: Housing on Java Island in Amsterdam (Randstad) built in 2000 to respond for housing needs
http://goamsterdam.about.com , August 2007

networks, but can be applicable as well for regional networks).

In either case i.e. workers or professionals, responding to housing needs is directly met through constructing new compounds and districts or transforming existing once, hence, a direct visible spatial impact.

3-8-2 Redefining the functions of space

Redefining the functions of space is a possible indirect impact for getting involved in networking. In this section two of these impacts are discussed, they deal with redefining building uses, and redefining the social distribution of population in cities that are involved in networking.

Redefining the uses of the built environment

The emergence of new forms of activities and supporting services because of networking would require space, yet in the cases specific to those of ICT networks, transformations of the existing fabric and the built environment can also support this need.

Getting digitally connected through the wide spread of ICTs led to an interesting transformations of space. Mitchell (2000) drives an example from San Francisco, in which he

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[36] http://www.sptimes.com/2005/09/18/china-gallery/page2.shtml , August 2007.

conducted some of his research, where there has been a renaissance in the previously decaying area of the city. This has been sparked by the conversion of old manufacturing and warehouse spaces into attractive, computer-networked, live/work places. Many of these places are occupied by professionals working in ICT, entertainment, and financial industries who like the flexibility of working at home by means of their Internet connections.

In the case of the Emscher park discussed earlier in this chapter, the networking approach could be clearly identified in its regional development, which seeked to redefine the uses of old industrial sites giving the region a different image, while containing the old landmarks of the regional landscape, as a result redefining the functions of its industrial sites took place, which was done through networking and collaboration of actors and agents in the region[37].

Redefining the social structure within the urban fabric

Castells (2000) illustrates that the involvement in the network society has its social dimension that in its turn is reflected on the space and its social structure, such an impact differs from one context to the other. He illustrates the attitudes of the social strata in both the American and the European cities that are involved in networking. In the American case, the social elite and professionals in major cities tend to reach for the suburban life, leaving the lower classes in the decaying cores of the cities. While in the European case, most professionals tend to settle in the inner cities, closer to their work places.

This reflects also the possible tendencies among the new comers, which might affect the established social structure and population distribution in the cities.

3-8-3 Emergence of new types of human settlements

Revisiting the argument of Sassen (1991), discussed at the beginning of this chapter, when she refers to cities involved in global networking to represent an agglomeration of specialist activities, between different firms, organizations and enterprises, which are all engaged in a process of networking.

As a result of this networking, a new form of spatial settings was coined, the emergence of a certain type of human settlements that are neither real cities nor villages but productive and innovative areas. This kind of settlements coincides with the principles of the "milieu innovateur" in which the firm is not an

Fig.3-26. Silicon Valley: the urban pattern is articulated around ITC companies
Source: http://www.wwwebport.com , July 2005

isolated innovative agent but part of a milieu with an innovative capacity (Moulaert et al, 2003), where several firms working in related activities come together in a process of close locational proximity and work on exchanging ideas and cooperation.

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[37] See the discussion on Emscher park in section 3-4-3 of this chapter.

Indeed a spin off of supporting services, stems up and agglomerate at the same place; clear examples on this type of settlements can be seen in Silicon Valley in California and Sophia Antipolis in France. But of course, in earlier regional development approaches, the emergence of new settlements to stimulate regional development was evident, for example the construction of new cities to act as growth poles for development.

The possible spatial impacts because of regional networking and networks are used as an analytical framework later in this thesis to analyze the spatial impacts that could take place if networking and networks are applied to the Egyptian case study region, as seen in chapter nine. It is important to stress that such impacts differ from one context to the other in their nature and ways of happening, which is clearly obvious in the Egyptian case that is different from the other cases discussed here.

From a certain point of view, these impacts are considered rather elementary and not specifically related to networks, this could be correct, however, one should take into consideration that despite that these impacts can happen anywhere, the reasons for their occurrence make the difference, the view in this thesis, is that the involvement in networking is one of the causes for the occurrence of these impacts.

Part III: Historical and Contemporary Examples

This part gives some historical and contemporary examples of networks, in which some of the discussed elements in this chapter are reflected on them. The aim of giving the historical examples is to prove that the concept of networking and networks existed through history, while the contemporary examples reflects more on cases of regional networks, since they belong to the level in which the case study region is situated.

3-9 Networking and networks existed through history

The concept of Networking is not a new or modern one. Despite that most literature on networking in modern times started to surface by the late 1980s and the early 1990s, yet, the concept itself long existed before. As such, the main aim of this section is to briefly show through a few historical examples from Europe, Asia, the Middle East and Egypt that networks existed through time in different places. The examples focus on the historical trade-routes networks while realizing that other examples existed in relation to cultural, political and military aspects.

3-9-1 The Hanseatic League

The *Hanseatic League in medieval Europe* (13th to 16th centuries) is an example of trade networks that emerged initially as a mercantile league of medieval German towns for the sake of trading with foreign towns (Braudel, 1992).

In order to obtain mutual security, exclusive trading rights, and, wherever possible, trade monopoly, the towns drew closer together forming a loose network of mutual assistance. Later on ports and inland towns from Flanders and the Low Countries to Poland entered the league, but the north German cities remained the principal members, where the number of cities in that league fluctuated between 70 to 160 members.

Fig. 3-27.The Hanseatic League
Source: http://encarta.msn.com/media_461547227/The_Hanseatic_League.html , July 2005

Within the elements that were discussed earlier, this case could be considered an international regional network or a trans-boarder network by contemporary means, though the concept of boarders was not clear at that time.

The three types of networks can be defined here, since the actor network was composed of the traders involved in the Hanseatic League, to realize their interests. The functional networks could be identified in the cooperative activities related to trade and security. The cities and ports composed the nodes of the network, while the sea routes were mainly the physical links, which were used not only by members of the League but by other people as well.

3-9-2 The Great Silk Road

The Great Silk Road, the commerce route between the East and West, was not a single road, but consisted of a network of routes that existed already more than 2000 years ago, its most flourishing time was in the 2nd century, connecting the West mainly Rome to the East especially China.

Fig. 3-28: The Great Silk Road
Source: http://www.advantour.com/silkroad/index.htm , June, 2007

The Great Silk Road not only served for transporting silk, but all kinds of goods were exchanged between the big empires. The traders did not go from one end to the other, but traveled only a short part of the route, trading their goods in the big cities of the Silk Road,

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buying others, and going back. The route did not only serve as a trade route but it also had an intercultural importance, where people of all different cultures and religions met in the trading towns and exchanged, besides goods, ideas, opinions, attitudes, traditions, philosophies, knowledge and much more (Boulnois, 2004).

Accordingly, this is another example of an international network that is composed of regional networks along the different segments of the route. The nodes can be identified as the market places, fortresses along the route and so on. It is difficult from the available information to identify the possible actor networks, however these could be argued to be composed of merchants of different products. It is obvious that the functional networks were related to trade, the physical networks are mainly the caravan routes with the caravans as the main transportation mode. It is argued here that the route was not only used by traders, but by other users who had their networks such as bandits, who were common in such circumstances.

3-9-3 Nabataean trade routes

Gibson (2002) describes the Nabataeans as the builders of Petra (now in Jordan); they were an Arab tribe who developed their own trade routes through camel caravans and maritime routes in and around the Arabian Peninsula dating back to 1900 BC until 106 AD. They acted as merchants who linked the ancient regions of Arabia, the Hagarites, Mesopotamia and Edom.
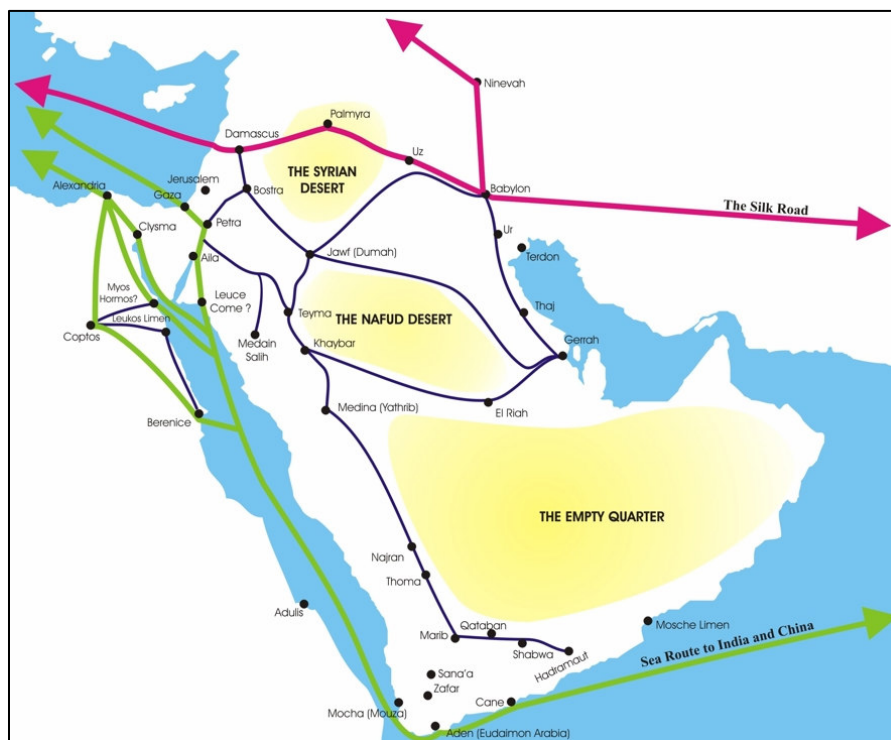
Fig. 3-29: The Nabataean trade routes
Source: http://nabataea.net/trader.html . June. 2007

Between 250-100 BC, they were involved in trade with Southern Arabia, which in turn was trading with China and India, where they transferred goods coming from there through their newly developing Nabataean Empire to Alexandria-Egypt, Damascus, Mesopotamia, Greece, and Rome, accordingly their trade routes included inland and port cities. At a specific moment in history they were considered as an emerging global economic power. They were never conquered in fact they were acquired by the Roman Empire. It appears that the Nabataeans did this willingly to gain Roman citizenship for their nobility, and also to gain monopoly over the East Asia trade (Gibson, 2002).

Another example of an International – regional network, the nodes are ports, markets and fortresses along the different routes, the physical links are through the water ways and caravan routes with the water ways and the caravans as the modes of transportation. The main actors were the traders, and the functional networks similar to those of the previous examples.

3-9-4 Egypt's Forty Days Route

A large segment of this route passed through the case study region, in the Western Desert of Egypt. This means that networking existed there in a certain form thousands of years ago.

Darb El Arba'in or the Forty days route was a forty days' march from Kobbé (El Fasher) in Darfur to Asuit in the Nile Valley. The route passed through the Kharga oasis to Asuit in the Nile Valley at its Northern part, which is now converted to the Kharga- Asuit highway.

According to Jobbins (2003) and Vivian (2000), the ancient Egyptians, Persians, Greeks and Romans used the road to administer their own provinces, as well as
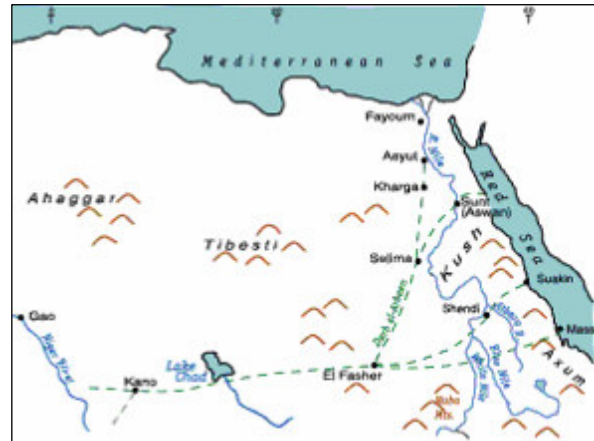
Fig. 3-30: Darb EL Arba'in passed from Darfur to Asuit. Source: http://www.egypt-tehuti.org/articles/interior-africa.html , August 2007.

trade, they used to trade cargos of wheat to Africa in return for spices, gold, ivory and exotic animals.

The Arabs[38] introduced the great caravans which traveled up from Darfur with slaves and cargo, in which the slaves were destined for Egypt, North Africa and America. They were assembled in Darfur, and when reaching Asuit they were sold by their traders, who bought other goods from there for their return journey; meanwhile the slaves and goods would continue up north to Kerdasa near Cairo for their final purchaser and destination[39] (Jobbins, 2003). Through time, new communities were constructed along the route to form posts and stops at strategic locations to serve the trade routes, they included temples, markets, fortresses and route stops.

It is important to mention that the route at some locations branched to reach certain stops either west towards Dakhla oasis and further to Kufra oasis in Libya or east to different points along the Nile Valley. This route continued to function until late 19th century when the slave trade was abolished in Egypt and America.

This is a case of regional network that mostly existed in Egypt and Sudan (which in many periods through history were considered as one nation) again the nodes are the stops, markets, etc along the route, the physical link was mainly the desert route, the actors started basically as slave traders but then included traders of different backgrounds. The functional networks are argued to be the complementing functions along the stops of the route. However, it is difficult to give a correct account on the structure of the different networks along the routs because of the lack of detailed information.

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[38] The expression Arabs refers to people coming originally from the Arabian peninsula.
[39] http://weekly.ahram.org.eg/2003/664/he1.htm , August 2007.

3-9-5 Remarks on the historical examples

Through these examples the argument that networking and networks are not new concepts is given a concrete substantiation. The examples demonstrate that:

- These trade routes can be conceived as networks that were realized and became spatially tangible because of networking for cooperation between the traders (actors) who existed along the different places and settlements of these routes to achieve and realize their common interests.
- It is incorrect to state that these relationships were formed in a horizontal way with equal interventions and rights among the actors involved, despite that the factor of trust existed among them; instead, powerful traders had stronger positions in such networks, instructing weaker traders (actors) what should be done to realize their interests, accordingly, hierarchies governed by interests and power relations existed in these routes.
- Places and settlements along these routes had specific functions necessary for the trade activities for example markets, ports and watch posts. These functions were manifested in space by different types of construction, which are argued to have contributed to the transformation of the landscape along these routes. In many cases, locations along the route gained importance because of contemporary interests by the traders in the route, e.g. strategic interests and not only because of functional locations e.g. port. These interests were not necessary sustained overtime.
- Finally, when the interests in these routes diminished and became obsolete, they faded away and seized to exist; unless the settlements along these routes had other functions different from the supportive ones for the trade routes, they had no reason to exist and gradually vanished (Camm and Irwin, 1984). This was the end of many settlements along the forty days route, which lost their reasons for existence over the years.

Fig. 3-31: Ruins of Um el Dabadib settlement near Kharga, which used to provide certain services along the ancient 40 days route in Egypt.
Source:http://news.nationalgeographic.com/news/2003/09/photogalleries/kharga/index.html , August 2007.

From the above discussion it is clear that networks have always existed, as argued by Innes (2005) states, however, their importance increased and the need to work with them became evident with the contemporary effects of globalization, information technology and the increasing complexity of the social and political systems.

3-10 Examples of regional networks

It is not the aim of this section to make a comparative analysis between the reviewed cases in instead a brief review is given on each case. The reason for giving these examples is to help in understanding how regional networks work in reality and how it is possible for them to contribute to regional development. At the same time, since the concept of networking and networks is relatively new to some readers, it is important to show them through these examples, that this concept exists and is functioning in several contexts in the world.

The examples chosen were each selected for a specific reason: the Bothnian arc in Northern Europe between Sweden and Finland is chosen as an example of *a network in the making*, the Randstad in the Netherlands as a classic example of *a network that is already functioning* in a polycentric urban region and the third is the Pearl River Delta in China as an example of *a regional network that covers a large region* in which its cities are not within close proximity to each other. These cases are reviewed in the light of the three types of networks discussed earlier, actor, functional and physical networks.

3-10-1 The Bothnian Arc

The Bothnian Arc is *a network in the making*. It is foreseen as a trans-border network strategically located between the Baltic Sea Area and the Barents Region between Finland and Sweden.

About 610,000 people live within the Bothnian Arc (B-Arc) region, which includes more than half the population of northern Sweden and northern Finland[40]. There are several cities in each of the two countries engaged in this network, on the national level, and connected with the other side via the trans-border network. This project includes seven Swedish and five Finnish municipalities.

Fig.3-32: The Bothnian Arc
Source: http://www.bothnianarc.net

The actor network

The actor network was conceived in the form of a board set up as a medium to include the main actors in the B-Arc those are municipal representatives, members from industry and commerce, members of some universities in the region, and other related actors.

The main aim of the network which corresponds to the interests of its actors is to create a strong and competitive region, since it has Europe's northernmost concentration of industries and advanced know-how. In order to realize this aim, the network contributes to the creation of a future regional vision and a development strategy that will strengthen both business and society. Therefore the main goals of the B-Arc are to identify possibilities for future development in the region, to create networks for vital and long term regional cooperation, and making the region well known in the European Union.

Similar to other networks, the B-Arc is not a government body and it has no executive powers, which makes Donnelly et al (2005) suspect that achieving cooperation between national institutions such as universities, governmental institutions and provinces will be far from easy and can take nearly years to take effect. They argue that even inter-university cooperation is normally slow to emerge due to pressure on resources with the main interaction arising out of personal contacts between staff rather than from inter-institutional agreements which can often proves to be of short duration. Perhaps because of the novelty of this network, the success factors for achieving a network are not fully "in place" yet, which includes the presence of trust between actors, the establishment of pacts and regional agreements, etc.

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[40] http://www.bothnianarc.net , June 21, 2005

The functional networks

The aims and goals of the actor network are supposed to be realized through functional networks by integrating the main activities in the region in cooperation based on functional synergy. According to Donnelly et al (2005) the main areas of expertise and specialization in the region that can be integrated in functional networks are:

- *The sites of steel industry* is present in many settlements of the B-Arc. Individually each of these sites is small and has little choice on its own, but if combined in synergy they can compete on the international level.

- The *advanced ICT industries* in the region are one of the most important development potentials in the region, specially with the presence of major companies in this region such as Nokia in Finland and Erickson in Sweden, with the possibility of promoting cooperation and specialization between their production centers.

- The *activities of research and development (R&D)* exist in research institutions and universities through out the region, which are of considerable importance.

- Finally, *tourism* that is being promoted for cooperation on the regional scale.

In that sense, creating synergy networks based on the above activities is considered an evident necessity with the reasoning that cooperation on the regional level will enhance the competitive capacity of the region in relation to others.
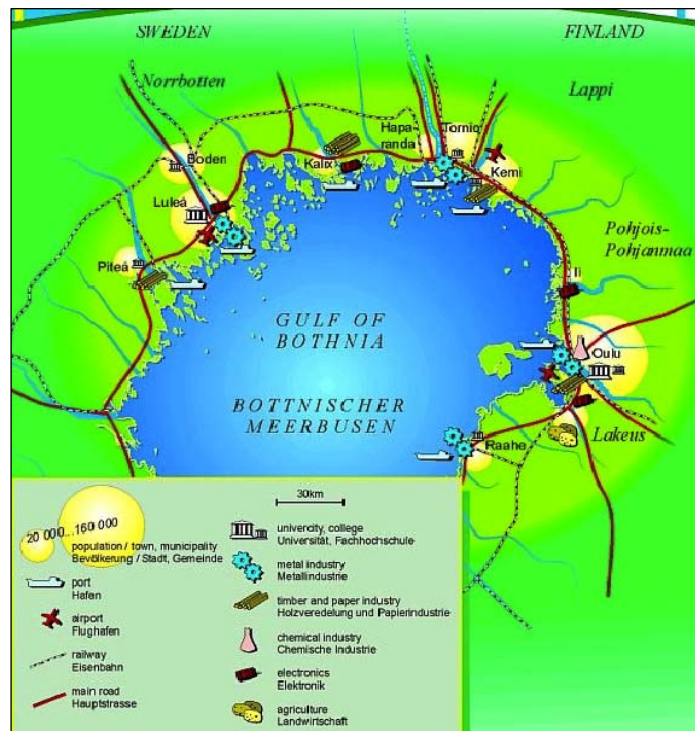
Fig.3-33: Specialization of activities in the Bothnian Arc
Source: Antikainen et al (2001)

In order to realize the functional networks that are/could be built on the existing activities, three sub projects are being implemented (*ibid*):

- "Vision, Strategy and networks" is a project that coordinates the overall cooperation strategy, dealing with regional planning issues and means and methods for development based on the activities within the region. This includes the establishment of networks for collaboration in research and education among the region's universities, to create a 'learning region' through exchanges of students and staff on a trans-regional basis to facilitate the dissemination of knowledge and practice.

- "Tourism and the environment" which investigates conditions for sustainable development of the region's tourism industry by making the best possible use of natural and cultural environments as destinations for tourism, and to market the region as a whole.

- "Communication systems" is a project that aims to create a mutual vision and action for developing communications, including ICTs and transportation infrastructure in the region. It is intended that all involved parties should eventually get connected through these communication networks to benefit from the multidisciplinary synergies generated between them.

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Physical networks

As mentioned earlier, one of the great challenges for the Bothnian arc network is the long distances between its urban centers. Several attempts are made to shorten the commuting time through different means of transportation making the soft distance as short as possible for daily commuting. Therefore it is a necessity to seek improved road, rail, sea and air transport to ease the flow of goods and people to stimulate the intended network (Antikainen et al, 2001). This, in addition to the project of communication systems discussed above, are considered the physical dimension of the B-Arc regional network.

Assessing the Bothnian Arc

According to the available literature and information available on the B-Arc it is possible to deduce that the regional development strategies applied in this region which incorporates the ideas of regional networking and networks, build on the existing spatial assets and its different clusters. By using the clusters presented by Friedman (2006) one observes that the intended regional network builds on the intellectual and creative assets of the region, through the intended cooperation in research and development, it also identifies the natural and environmental assets through its project of sustainable development for the tourism and environment, while attempting to enhance the quality of regional infrastructure.

As for applying the criteria of Albrechts (1998) on the Bothnian Arc, it is assessed as follows:
1- *The quality of the urban areas themselves* is mostly fulfilled within the region in terms of service provision and the quality of nature and open space.
2- *Complementarity of the nodes in the network,* which is seen as a possibility based on the concrete potentials of its current pattern of activities. However, in order to reach the foreseen complementary status, more emphasis should be done to define the specialization among the nodes (Donnelly et al, 2005). This should be coupled with identifying a regional labor market, to create a variety of job opportunities that stimulates the flow of people and investments within the region (Antikainen et al, 2001).
3- *Flows of goods, people and information between the nodes* is directly related to the previous aspect. Once the complementarity status is in place, the increase in flows will become more evident.
4- *The physical links between the nodes* are improving and are getting more adequate trying to overcome the challenge of long distances among some of the nodes of the network.
5- *Various forms of organizational and actors' linkages between the nodes:* The current association that runs the network does not have executive powers. In addition it takes years to establish relationships among the different actors in this association (Donnelly et al, 2005). Conflicting attitudes exist among the related actor groups; some reflect willingness and motivation to participate in the network, while others have skepticism on the whole issue (Antikainen et al, 2001). Therefore this criterion is still weakly met.

From this analysis it is evident that the Bothnian arc is a network in the making, it is difficult to asses what its outcome would be. One must also admit that the match between the application of the network concept and what is actually happening on the ground to realize it needs more investigation in light of empirical data and analysis that are beyond the scope of work within hand. However, this example was reviewed since it represents a network in the making that includes many of its nodes within long distances of each other, a problem to be overcome through transportation and communication networks. This is similar to the Egyptian case, in which all the nodes within the regional network are of large distances from each other, which needs a concrete intervention to establish efficient physical networks to shorten the soft distances between them.

3-10-2 The Randstad

The term Randstad stands for a string of medium and small sized cities arraying themselves around an open area known as the green heart in the Netherlands. This area (about 6.000 Km²) is inhabited by 6 million inhabitants making it the densest area in the Netherlands, with Amsterdam, Rotterdam, The Hague and Utrecht being the largest cities.

Kloostreman & Lambregts (2001) describe this area that is known historically for being a polycentric urban region because: a) it consists of a number of historically distinct cities that are located in close proximity, b) it lacks a clear leading city dominating in political, economic, and cultural aspects; instead tends to consist of a small number of larger cities that do not differ

Fig.3-34.The main cities in the Randstad
Source: Hack et al (2000)

that much in terms of size or importance and a greater number of smaller cities, and c) the cities of the region are spatially distinct and constitute independent political entities.

The difference from other networks

The Randstad is considered a functioning network that evolved on historical basis of being already a polycentric urban region, which works to achieve agglomeration economies in comparison to single cities, especially with the advancement in transportation and communication technologies that provide better linkage between its cities.

Another difference between this network and others is that it constitutes a contiguous travel to work area due to the close proximity within its settlements, forming one pool of labor market.

Batten (1995) states that the Randstad is a classical example of regional networks, as there is a clear contrast in the functions of its main cities.

Fig.3-35: The Randstad, a classical network of cities
Source: Wall & Knaap (2006)

This idea implies that:

- First, the cities function as a single urban entity for businesses, residents and visitors.
- Second, because it functions as a single entity, its cities display a considerable degree of specialization and a complementary division of tasks; this is reflected in considerable flows of people, goods, information and money.
- Third, it implies that this network is a 'world region' of international significance (the Dutch spatial planning Bureau, 2005) [41].

Because of the above aspects, this network is reviewed as a classic example of networks in polycentric urban regions in which the proximity factor is in favor of the network, which is a major contrast to the Egyptian case discussed later in part three of this thesis.

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[41] http://www.ruimtelijkplanbureau.nl , June 2005.

The actor network

Initially as pointed out by Faludi et al (1998) there was no institutional representative body for the Randstad. Instead, a voluntary coordination between the provinces responsible for the Randstad existed, but all efforts to form an overall Randstad province had not worked out.

However, a cooperation dealing with the Randstad region (Regio-Randstad) became active in 2002, which is a joint venture between the four main provinces, the four main cities and the four city regions, this is supported by a board, an executive committee, and the Regio Randstad bureau. Public authorities within the Randstad jointly decide on issues that affect the Randstad with the role of the Randstad bureau to clarify problem definitions, develop solutions and generate support and enthusiasm. In addition to this there is a board between the Regio-Randstad and the government that determines the strategic long-term policies, the coordination and agreements in the realization and implementation of strategies and policies in the region. Usually this set up includes ministers and other managers from industry and/or social organizations in the Randstad[42].

Before officially setting the above joint venture, the physical planning of the Randstad focused on limiting further growth within that area resulting from national economic growth and population increase. Berkelbach (1997) refers to the initial planning reports (1960s- 1988) that focused on the need to preserve the green heart of the Randstad and the buffer zones between the cities in addition to providing housing and new towns to accommodate the population growth.

However, the current attitude is geared, towards reinforcing the Randstad's function as a center in the Northwest European economic networks and as an anchor point within the spatial economic structure (De Regt & Der Burg, 2000).

Therefore the main aims for the Randstad are to improve the quality of life and to strengthen its international competitive position while increasing its involvement in global networking[43]. Some argue that in order to reach this level, local cooperation and collaboration between its settlements should be strengthened to gain global competitive potentials

In order to realize these aims, several key strategies have been set to deal with the main key aspects to achieve the desired regional development (Regio-Randstad, 2005).

- Though accessibility and transportation networks are abundant, there is a need for enhancement. Therefore there is an ongoing strategy to realize a single network comprising roads, rail, waterways and transfer points, and this connective network is expected to act as a backbone for the spatial, economic and cultural development of the Randstad.

- Enhancing the social and economic performance, is an important step to realize the above aims, hence, a strategy for economic development, setting of knowledge infrastructure and stimulating innovation is being developed, while widening the possibilities of interaction between different economic partners and enhancing the links for knowledge and innovation within the different research and industrial institutions of the region[44].

- Finally in order to enhance the quality of open space, attention is paid to the so called green-blue network, which is the integration and development of green spaces and water surfaces in the Randstad to preserve its appealing environment. In addition, spatial planning and housing strategies are directed to realize balanced relationships between living and working environments and housing provision.

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[42] http://www.regio-randstad.nl/eng_organisatie/bcr.php , June 2005
[43] http://www.regio-randstad.nl/index_eng.php , June 2005
[44] For research and education institutions there are seven universities, many colleges of higher education and a number of specific knowledge institutes in the region.

The functional networks

As discussed earlier there is already a network in the region based on the specialization of activities among its cities; thus the aims of the actor network are realized through managing and directing the functional networks to achieve the regional development strategies. Tummers and Shrinjnen (2000) describe the specializations of the four main Randstad cities, as they agree with other scholars that they functionally complement each other:

- Amsterdam is the financial and air transport center, flanked by a harbor complex, in addition to its cultural activities.
- Rotterdam is the largest seaport in the world, with a major role in the transshipment of different cargo and goods to neighboring countries, in addition to its cultural and university facilities.
- The Hague is the government center which hosts many civil services, diplomatic and NGOs activities and international institutions, and being home to the head office of multinational enterprises.
- Finally Utrecht is the hub of the national rail network, therefore an important center for services acquiring important institutions in addition to the university which is the largest in the country.
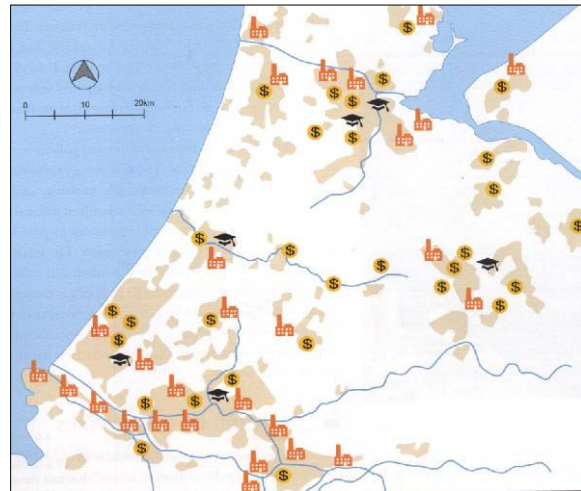
Fig.3-36: Activities in the Randstad
Source: Hack et al (2000)

Physical networks

As seen from the regional development strategies of the Randstad, mobility and communication networks have a crucial role. These networks offer access to land, jobs and market opportunities, in such a way that it supports the dispersion of activities (Tummers and Shrinjnen, 2000).

The area is widely covered by road networks and other modes of transportation, to provide efficient accessibility within the region and its peripheries. In addition to the presence of the Schiphol airport that is serviced by fast rail links, not only linking it with the rest of the region but alsowith other destinations in Europe (De Regt & Van Der Berg, 2000).

As for telecommunications, the traditional phone and mobile lines cover the majority of the country, with almost 88% of the household connected to the internet. In that sense the virtual connectivity is widely functioning in the Randstad, are achieving instantaneous virtual accessibility (Tummers and Shrinjnen, 2000). As such, these networks offer many cooperation opportunities in the region in terms of research, education and culture.

Assessing the Randstad

Similar to the first example of the B-Arc, the development strategies in the Randstad used and invested the regional spatial assets and its clusters. In terms of the environmental and natural asset the development strategy aims to protect the environment through protecting the green heart of the Randstad, It builds on the intellectual and creative assets of the region as well as

the cultural ones, with a special attention to enhancing the regional infrastructures and the quality of life for the people in the Randstad. Unfortunately because of the limitations of this research, in depth analysis of the case in relation to the spatial clusters of assets could not be carried out.

By analyzing this network through the criteria of Albrechts (1998), it is realized that:
1- *The quality of the urban areas* is a criterion that exists in the Randstad however; there is a rising problem over the need for space, and the possible extension of different activities over the green heart (De Regt & van Der Berg, 2000), finding a solution to this situation is on top of the objectives of the development strategy.
2- *Complementarity of the nodes in the network* is evident which are characterized by a good quality of transaction costs and capabilities, with an aim towards further intertwining between the specializations of the different centers in the region, this is to increase the competitive capacity of the Randstad to compete with other major urban European regions.
3- *Flows of goods, people and information between the nodes:* the common scene in the Randstad is the daily travel to work trips, constituting a remarkable number of flows, which is a direct outcome for the close proximity between the settlements of the region, as the average travel distance would be 35-40 Km characterized also by short soft distances.
4- *The physical links between the nodes,* which is a direct element in achieving the above situation of flows that is manifested in good mobility and communication networks.
5- *Various forms of organizational and actors' linkages between the nodes.* In the case of the Randstad the association responsible for managing, discussing and introducing policies geared towards the development of the region was only established few years ago, hence this organized actors' interaction is very recent. In fact the concept of the Randstad started as a concept in the Dutch planning reports, which is initially considered a state initiative.

3-10-3 The Pearl River Delta

The third example is the Pearl River Delta (PRD) in Southern China, as mentioned earlier, this example has been chosen since it covers a large area with large population in which the nodes of the network are located far from each other, it is also considered by some as a state initiative while others even consider it a top-down policy. Both the factors of large distances and state intervention exist strongly in the Egyptian case.

The PRD area is already engaged in a form of cooperation from the 1980s until today. It covers an area of almost 50,000 Km² and it includes nine prefectures of the Guangdong province in mainland China. It is also called the Greater Pearl River Delta (GPRD) when adding to it Hong Kong and Macao,

Fig.3-37: The GPRD Region.

with a population of almost 50 million people. The Eastern part of the PRD is the most developed economically in comparison to its western areas, which are also open for development[48].

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[48]http://www.nationmaster.com/encyclopedia/Pearl-River-Delta#Location_and_demographics,July 2005.

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Background on earlier cooperation

Before changing the economic policy in 1978, the PRD had been mainly dominated by farms and small rural villages, when the economy was reformed and opened; a flood of investment turned it into the mainland's economic powerhouse. The PRD's startling growth was fuelled by foreign investment coming largely from Hong Kong manufacturers who moved their operations into the PRD, seeing a possibility of escaping the rising labor costs, but also because most of the raw material came from mainland China.

As a result, a successful classical model of economic cooperation emerged, known as the "front shops-back factories".

 Hong Kong continued exporting

Fig.3-38:The GPRD network of cities.
Source: Yanliu (2005)

manufactured goods, & gave rise to exports of semi-finished products & components from Shenzhen (a major city in the PRD- mainland China) through Hong Kong. The success of these ventures soon became apparent to multinational enterprises, and they also formed joint ventures in Shenzhen. Many of these were brokered by Hong Kong's financial institutions and assisted by its services.

Other big cities in the region picked up some of this "spill-over", and later smaller cities and towns expanded with resulting relocations. This expansion was associated with an emerging pattern of specialisation and competitive advantages among different towns.

For example, one town became a "lamp and lantern" town, another became known as a garment town, a third city attracted several large electronic manufacturers; and another two towns became centres for the IT industry[49].

The actor network

From a certain point of view the GPRD is considered a state led initiative. The institutional settings in the GPRD have a unique situation, in the sense that the three involved zones in this network do not belong to the same government.

There is no overall official institution for the region; instead, the part in mainland china is administrated through the regional government of the Guangdong province, while Hong Kong and Macao are each considered a Special Administrative Region with their own government through the concept of one nation and two systems.

However, there is a growing coordination between these three governments and the Chinese central government.

The state intervention in establishing the network is evident since the central government works on creating a congenial environment and providing guidelines for regional cooperation. Enterprises are therefore executors of the strategy that are encouraged by the government to seek cooperation and development in accordance with their respective development needs and market practices, at the same time there is a consensus among the actors that the market and its players have an ability to be self-correcting and to respond to changes.

as shown by Huang (2004). He mentions that the state and provincial governments play a vital motivating role within cross-regional economic cooperation in four main aspects: unifying

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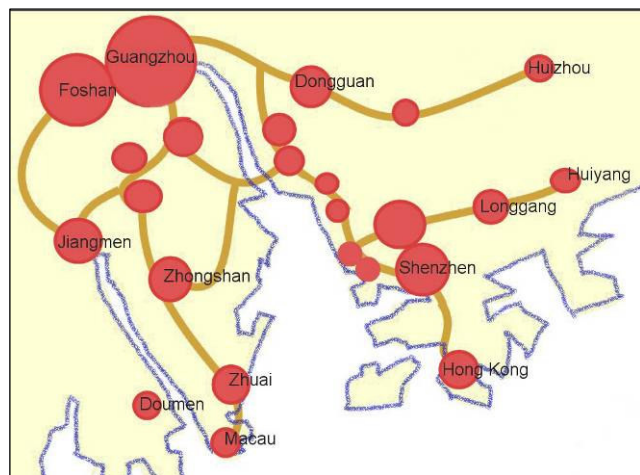
[49] http://www.accci.com.au/intro#intro , July 2005Australia-China Chamber of Commerce and Industry of New South Wales , Chamber report on recent developments in China's Pearl River Delta, 2002,

market regulations, planning, coordinating, guiding cooperation, solving common problems that arise in the process, coordinating rational and balanced infrastructure construction, and motivating concerted efforts to forge PRD brand identities and influence.

The current vision of the future development for this region as announced by Cheng (Chairman of the Hong Kong general chamber of commerce, 2003) is that Hong Kong and the PRD should develop together as the services megalopolis of China and the world, by pooling their resources and increasing their cooperation to gain competitive capacities world wide. Cheng (2003) states the strategies to realize this vision it as follows:

- *A common purpose*: The cities of the region would compete together, not against each other.
- *Institutional partnership:* There would be strong institutional linkage between the cities, both in government and the private sector with a clear understanding of their roles.
- *An international talent pool,* providing quality human resources for the PRD and the whole country, but also attracting talents, from the country and around the world.
- *A fully connected region,* which would be realized through integrated transportion and comunication networks, with Hong Kong acting as a transportation hub for the PRD while the GPRD acts as a hub for the entire country.
- *A services hub,* in which the PRD would become the most dynamic financial, tourism, distribution and information centre for the country.

The functional networks

As mentioned earlier, regional cooperation has been already taking place in this area, therefore functional networks already exist to a certain extent in the region.

The PRD in mainland china namely the Guangdong province is a centre of production and manufacturing. It is indeed cooperating with Hong Kong that is already on the map for its high range of services in terms of developed business infrastructure and international perspective. This cooperation reflects the idea of using a Hong Kong shop front to house the financial management, sales and marketing, storage and transportation and similar high end activities of a Mainland based production plant, which adds an extra layer of comfort and familiarity for overseas business partners[50].

The specialization of activities in the GPRD is classified as follows:
- Guangdong province is focusing on manufacturing industry
- Hong Kong is focusing on promoting modern logistics, finance and
- Macao is focusing more on building up its tourism and entertainment industry.

For the settlements of Guangdong province itself, there is already a specialization among its cities, however, in some cases, duplications exist. As discussed by Cheng (2003), the problem in the PRD is that each city seems to have its own agenda, which might duplicate with that of neighboring cities, hence affecting the cooperation attempts for building a critical mass.

Physical networks

As a matter of fact the GPRD has a comprehensive transportation network composed of airports, railways, ports, highways and waterways. There are five airports in the GPRD that work closely together. As for the railways and highways, many of the key rail arteries in China start in the GPRD, most of the cities linked by highways or railways, with several projects of further expansion in these systems are under way[51]. At the same time, port facilities are tangible in the region including Hong Kong.

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[50] http://www.thegprd.com/advantages/hk_advantages_02.html , July 2005.
[51] http://www.thegprd.com/about/transportation.html , July 2005.

For the ICT networks, the whole area is being connected to each other and to the world via an optic fiber telecommunication system mainly through earth stations and mobile telephony (Castells, 2000); accordingly, the third layer of the framework is substantiated.

The problem, however, arises from the nature of flows and their ease, Cheng (2003) mentions that the main friction that is going on is the flow of people from the mainland to the other two regions, because of the restricted migration and movement regulations of people, a problem that needs to be tackled.

Assessing the Greater Pearl River Delta

The GPRD is a regional network of a mega urban configuration, in terms of size, an opinion that is reflected by Castells (2000). It is also known for the spatial discontinuity between its nodes as there are several elements separating them from each other such as rural settlements, agricultural land and undeveloped areas, the main backbone in that case that links these areas together internally and to the world is the multiple modes of communication links (*ibid).

This spatial discontinuity and the large distances between the nodes of the network, were of the reasons for choosing the GPRD as an example, this is to show that despite these two obstacles, the network was realized and is functioning. The Egyptian case as well is characterized by these two aspects with large distances between its intended nodes separated by desert and other forms of landscape, therefore it could be argued that if despite the obstacles of large distances and discontinuity the GPRD is functioning, there is a possibility that a regional network can be established in the Western part of Egypt.

Another aspect in the Chinese case, is the direct involvement of the state to the extent of drawing the strategy and involving other actors to apply it, which is a matter of top-down involvement; as discussed in part two of this thesis, the Egyptian system has a long tradition of top-down regional development that is recently been changing, which shows that there might be a possibility of state intervention in the setting of the regional network, thus baring a similarity with the Chinese case.

Because of the shortage in information, it is difficult to view this case in relation with the spatial assets and its clusters set by Friedmann (2006), however, it is still possible to relate this network to the criteria of Albrechts (1998) as follows:

1- The quality of the urban areas, is hard to asses because of lack of knowledge in that regards, however, it is assumed based on Castells that prosperous urban areas exist in the region. These are neighbored by other lower rank or lagging areas, specially the parts in mainland China, the attention was given to develop the coastal regions, while the neighboring inner areas are lagging behind [52](Zhang et al, 2005).

2- Complementarity of the nodes in the network, which is clear, from the earlier discussion, exists in the region, however, sometimes duplications of activities and specializations take place, leading to a certain degree of competitiveness against each other.

3- Flows of goods, people and information between the nodes, which is problematic in some areas of the region, as discussed earlier, in regards to the flow of people between the mainland, Hong Kong and Macao.

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[52] Since the opening of the Chinese economy in 1978, regional development attempts mainly targeted the coastal provinces. These provinces were relatively advanced to inland provinces, and were granted the preferential policies first. Through these preferential policies, the coastal provinces received favorite fiscal and financial terms, and were also authorized more autonomy. Thus, these policies have promoted the richer provinces at the expense of poorer provinces, causing a development gap between them.

4- *The physical links between the nodes* are materialized in the physical networks, that are already functioning or under construction, which are overcoming the different patterns of spatial discontinuity between the nodes of this region.

5- *Various forms of organizational and actors' linkages between the nodes* are manifested in the established bodies for developing the region, and the direct involvement of the regional and central governments in setting development visions and strategies for the region, while other actors from the private and business sectors, together with the government agents, have to carry out these strategies and are encouraged to stimulate innovations and ideas. However, as Enright (2003) argues, sometimes there are misunderstandings taking place among those actors, about ways of handling matters, which leads to different outcomes than initially estimated.

In a certain way, it is believed that state intervention is in the form of a top down interference to form the network rather than the participation with other actors in sharing ideas and deciding on a common vision[53], this reflects the idea discussed earlier by Martinez-Fernandez (2001) that sometimes the state considers all other actors as agents for coordinating regional development attempts rather than partners in formulating the visions.

In contrast, another opinion sees that the PRD is not totally a top-down initiative, rather it emerged because of spontaneous cooperation among the settlements of the region that took place over several decades, but was regulated through the provincial governments, with the some top-down interventions such as the transformation of Shenzhen from a fishers' village into a major city in less than twenty years, to make a significant node in the network[54].

According to these criteria, it seems that the Pearl River Delta is a network that gained momentum in a high pace, which Castells (1996) forecasted that it will have a reaching global impact and not just a regional one.

3-10-4 Examples of regional networks: some remarks

From the above examples of regional networks, some remarks can be highlighted as follows:

- The three chosen cases represent different types of regional networks. The Bothnian Arc network is a trans-border network in the making, the Randstad is a classic example of a network in a polycentric urban region, while the GPRD is a large sized network, which is the result of direct state led strategies.
- The common aim in all networks, in addition to enhancing the quality of life for their citizens, is to enhance the competitive capacity of the region as compared to other regions. This is done through collaboration and pooling of resources within the networks and stressing on the aspects of specialization and complementarity of the functions and activities of its nodes.
- In most cases, the bodies set to run the network are powerless and most of their agreements are non binding. It is argued that if trust is not present within the actors of the network, there is no guarantee that the visions and strategies set by the actor network will be implemented. The case is different though in the GPRD as it is a state led initiative and the actors are encouraged to carry out these strategies, which on one hand could be considered as a positive aspect as it provides a way to ensure the implementation of projects, but on the other hand is considered a top-down policy since the role of other actors is limited to implementing the strategy and not in its setting.

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[53] Opinion reflected by a Chinese scholar in the SP2SP conference held in Leuven in April 2007.
[54] This is based on a discussion with Xiang ZENG an architect from the PRD and a postgraduate master student at ASRO in August 2007.

- An important aspect in the process of networking is the *will to get involved* from the related actors. In the case of the Bothnian Arc this will is fluctuating from one settlement to the other, and the same principle among Hong Kong and the PRD, therefore further efforts are required to bring the actors together.

- When establishing a network it is important to build an image and a metaphor for it, with such an image it is easier to market the network and introduce incentives and pull factors towards it. This is seen in the three cases with each of them having a name used for marketing it together with other cases such as the Flemish Diamond in Belgium.
Kotler et al (2000) argue that there is a need to marketing regions to face the growing competition; they state that to create more opportunities, communities and regions must increase their skills in attracting investors and business. In this marketing strategy *image-making*, promotion and information distribution form critical elements[55]. This is complemented by creating a metaphor, which as argued by Albrechts et al (2002), can command attention and carry persuasive power in complex political contexts.

The lessons gained from these cases, are taken into consideration, when analyzing the Egyptian case study and further proposing a strategy for establishing networks, a small example on this influence is the coining of the metaphor: "The Desert Loop" to be used in the study region as discussed in chapter nine.

3-11 Using the theoretical framework

A brief summary is first given in this section to remind the reader with the many issues discussed in this chapter. This is followed by a concluding discussion of a possible theoretical framework of analysis, based on the previous issues, which is used later in analyzing the Egyptian case study region and suggesting the establishment of a regional network in the Western part of Egypt in chapters eight and nine.

To summarize
In the previous chapter, an attempt was made to give some clarity on the different perspectives of regional development; some of these theories (Perroux, Myrdal and Moulaert) make explicit reference to the role of:
  1- Cooperation and strategic behavior and its role in regional development and strategies.
  2- The reproduction of assets and resources essential to regional development
  3- Institutional dynamics of regulation and policy behavior.
Networking and networks belong to the concepts of new regionalism, they are means to achieve regional development among other means and approaches and not an aim in itself.
Although the objective was to see how networks can play a role, it would be a very poor reading of regional development dynamics if matches of correspondence of features for the network metaphor were only being looked for. In fact it has been seen in this chapter and chapter two that the regional development theory, although it recognizes the key role of cooperative behavior and networked synergies between resources, it is also about structure dynamics, cultural development, institutional building, etc.

This chapter had provided a comprehensive overview on networking and networks. In its first part, a proper definition on networking and networks was discussed concluding that networks are formed as a result of networking between relevant actors to fulfill common interests and reach common goals. These networks exist in space which is not only represented in the nodes and links of the network, but the regional landscape between them, this space includes people, nodes, links and clusters of spatial assets as shown by Friedmann (2006), which he

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[55] Cited in Antikainen et al (2001), Bothnian Arc- functional urban network.

interprets in his own way in relation to city regions, but are argued to be adapted and applied on the regional level as well.

Accordingly, the three types of networks that would form a regional network were discussed; these are the actor, functional and physical networks. With these three types defined, it is possible to formulate a framework of analysis in relation to space in which each type represents a layer, this framework is discussed in detail at the end of this section.

The levels of networks were then classified into global, trans-border, regional and city region networks, among which the Egyptian case study as a possible regional network.

In part two, some important reflections on the concepts of networking and networks were highlighted, in which some of the differences between networks and hierarchies were discussed, according to which it was realized that networks are not replacing hierarchies in many cases, rather they could be intertwined for the purpose of achieving regional development. This helped to understand the effects of networking and networks on regional development, which in turn helped to answer the question: "Why should regional networking and networks be considered as a tool for regional development?"; several effects were illustrated which were considered as reasons for considering the use of networking as a tool for regional development; these included: stimulating collaboration for regional development, reducing uncertainties, related to development attempts, pooling of resources to confront regional problems and disparities, creating new development potentialities through collective innovation, producing projects for regional development and ensuring the spatial diffusion of regional development. The important success factors for the networks especially the actor networks were discussed, such as the presence of trust, formation of pacts and network power among other factors.

These reasons are also valid for the Egyptian case, as seen later from the discussion in chapter seven, many Egyptian views reflected similar reasoning for the use of networking as a tool for regional development in the Egyptian region, where most of the Egyptian Academics and practitioners sought in it a way to achieve social equity within the citizens, a way to promote regional competitiveness and as a mean to realize the Egyptian dream of populating other regions in Egypt.

It was important as well to show the possible spatial impacts resulting from networks and networking, despite the lack of resources on this issue, an attempt was made to deduce such impacts, in which three of them were tackled, the need for space, redefining space and the emergence of new types of settlements. These three aspects are used later in chapter nine as a framework to analyze the possible spatial impacts that could arise if a regional network is applied to the case study region.

In the last part, historical examples were discussed showing that networking and networks existed since ancient times, but of course it should be taken into consideration that not any spatial interaction is to be called networking, then finally contemporary examples of networks from different contexts were given to show how the concept functions in real life.

A Framework of analysis: networking within a regional development perspective

This framework is based on the three types of networks discussed earlier i.e. actors, functional and physical networks whose elements are physically located in the nodes of the regional network. Within this framework, space is considered as an important integrating element, which is in itself an important "component" of all three layers. As discussed earlier, the spatial dimension of a regional network does not only include nodes and physical links, but it also includes the landscape and space between them that are affected directly or indirectly by the configurations of the different types of networks, the process of networking takes place in

locations in space, actors exist in space, and functional and physical networks are manifested in space.

It is argued that each of these networks exist simultaneously in three layers, which are directly related to each other:

- The first layer is the actor networks, in which different groups of actors form different actor networks that might intersect, or exist parallel to each other, and are formed according to the common interests of each group. The nodes of these networks (i.e. actors and actor groups) are physically located in places within a region, in which these places could be cities,

Fig. 3-39: Three layers of networks in the same space

villages or districts, within the regional landscape. These places can host different actors belonging to different networks, therefore becoming themselves physical nodes in different networks, as represented in figure (3-39).

- The second layer is the functional networks, which are based on the different clusters of spatial assets and opportunities that exist in the region. These functional networks are run by the actor networks in the first layer, who would set them up to realize their development goals and interests using those assets and opportunities. Similar to the first layer, the different functional networks might intersect together at some points or exist parallel to each other within the nodes of the networks. The functional networks are argued to have a clear spatial dimension, as in many cases they are based on activities that functionally complement each other and can be represented in the form of physical projects, e.g. industrial complexes, research centers, etc.

- The third layer is the physical networks, which is common within all the networks existing in the first two layers. There might be different functional networks and different actor networks, but they are supported by the same physical networks in the form of transportation and information communication technologies (ICT) infrastructures.

Relating the three network types to the regional development perspective, It is questioned how the three types could be linked together. The first one: the actor networks will be directly connected to the creation of institutions, interaction patterns, as well as, specific agencies relevant to regional development actions. These actions can be led by public and private actors preferably in a joint way. The second type: the functional networks refer at the same time to the outcome of previous development process, the resources and opportunities available for "new" regional development actions and that part of the regional fabric meant to be changed through the regional development action in which both the endowment and production of assets as part of the network dynamics and interactions should be considered. And the third type: the physical networks could be considered in different ways as a substratum for the other networks or as a particular type of functional networks

Despite that space is considered from the point of view of this research as the integrating element within the concept of the three layered networks, as seen from the above discussion, the origin of the literature used to discuss networking and networks originates to a large extent from social science domains, which made it difficult to give a substantiation and an in depth analysis of the role of space, nevertheless, through the case study part, serious attempts are made to show the link and the role of space and its relationship to networking.

By taking the above framework as a base for analyzing the case study region, while taking into consideration the issues discussed in this chapter, the following aspects should be dealt with in relation to the Western Part of Egypt:

-   Since, space is an important element in the three layered framework, discussed above, for a regional development scheme that is based on networking and networks to be proposed in the study region, it is important to identify the existing spatial relationships that structure the region and brings its settlements together, and to search for the different clusters of spatial assets existing in the region to capitalize on them.

By taking the three layered into consideration it is important to identify whether the elements that would compose these layers exist in the study region or not and if there are missing elements, how can they be substantiated; therefore:

-   For the actor networks layer: it is important to identify the possible actors in the study region that can be involved in the regional development process, while analyzing their interests, power and existing relationships to see how can they form actor networks, and what are the necessary elements that they need for this.
-   For the functional networks: It is important to know what are the possible sectors of activities in the region that can functionally complement each other, and whether there are already existing relationships of cooperation that could be further developed into networks, and what are the projects needed to spatially define these networks.
-   For the physical networks: it is important to identify the existing infrastructure in terms of road and transportation networks, railways, airports and the ICTs, and to decide on the missing elements and links that if substantiated will lead to the creation of a proper regional physical networks of accessibility and connectivity that support the other layers within the framework.
-   While doing the above investigation it is important to make sure that the required factors for the success of the regional networks exist in the region, and if they are missing, could they be substantiated?

The above aspects are used to analyze the Egyptian case study region in the third part of this thesis to reach for a proper proposal for regional development based on networking and networks.

Part Two

The Egyptian Context

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IV- Regional Development Interventions in Egypt:
a critical evaluation

4-1 Introduction

Due to the fact that most, if not all, the regional development interventions that were carried out in Egypt were based on the center-down approach, the interventions that took place in the study region were directly influenced by the regional and national development strategies set by the central government; therefore it is easier to understand the latter by first looking at the former. Thus, the purpose of this chapter is to present a comprehensive overview of the regional development interventions and approaches that took place in Egypt over the past four decades to provide a proper background that will facilitate the understanding of the development interventions that were carried out in the case study region, discussed later in chapter six.

As discussed in chapter two, usually the reasons for conducting regional development is to alleviate inequalities between the different regions, and to enhance the capacities of already strong regions to maintain their competitive capabilities. These reasons are also valid in the Egyptian case, which has a third reason that is to find a solution for the densely populated Nile Valley and Delta and the critical implications, discussed in chapter one, by attempting to increase the inhabited area of Egypt to release the pressure from the stated areas. This chapter focuses mainly on these attempts, since the development attempts that took place in the study region aimed to contribute to the deconcentration attempts.

This chapter attempts to situate the Egyptian regional development strategies within the economic and especially the spatial regional development strategies, discussed in chapter two, which in itself is a contribution since no other situation was found in literature. To do so, it is important to take into consideration the contemporary political and economic settings that influenced these strategies and interventions.

As a starting point for this overview, it is argued that the Egyptian regional development interventions have several characteristics that are related to the concepts of polarization and core-periphery models. Ever since the 1960s, when these interventions started Cairo has been the primary center in the country, as discussed in chapter one, followed by Alexandria. A situation that is comparable to the second stage of Friedman's core-periphery model that depicts the existence of one strong center, with the exception of Alexandria. Thus, most of the interventions that took place, aimed to establish other growth centers, in the form of new cities and communities to counter balance the polarity of Cairo and Alexandria, which is a similar situation to the third stage of Friedman's model.

4-2 Regional development interventions in the 1960s

From 1936 until 1952 Egypt was ruled by King Farouk the First. During his reign the country was recognized as an independent state (since 1922 from the UK) despite the presence of the British troops in the Suez Canal area. The defeat in the 1948 war against Israel and the corruption of the King, led to a revolution by army officers who seized power in 1952, declaring Egypt a republic one year later[42]. The 1950s and 1960s witnessed harsh transformations, as the country became a socialist central state. Egypt passed through a one party rule between 1957 and 1976; an era characterized by a centralized power structure, the absence of political competition, and controlled political participation. (Aliboni et al, 1984)[43].

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[42] http://www.mideastweb.org/egypthistory.htm , June 2007.
[43] Cited in Attia (1999).

4-2-1 Political and economic shifts

Through the 1960s Egypt saw several transformations and different regional events, which caused tangible political and economic shifts; some of which are:

- Egypt gradually shifted from being western to Soviet-oriented, this shift was a direct outcome of the International Bank for Reconstruction and Development (IBRD) decline to fund the construction of the High Dam in Aswan; consequently, the Egyptian government nationalized the Suez Canal to fund the project and sought the assistance of the Soviet Union[44].

The regional economic development strategy at that time became influenced by the Soviet model, discussed in chapter two, in which the government reduced the role of private sector by conducting several nationalization waves in the 1960s, hence, emphasizing the role of public sector. The government adopted the mandatory five years plans of the Soviet model, still applied until now, while attempting to realize modernization through industrialization, but not on the expense of agriculture, which as seen later, was considered an important economic base in most regional development interventions.

The country witnessed a period of economic growth recording a 6% annual growth after the implementation of the first national development plan (1960-1965). This plan was geared towards import substitution and liberalization of national economy, and witnessed the second wave of nationalization of private sector establishments (Attia, 1999).

This development plan was followed by a continuous down fall in economic growth due to declining domestic and foreign financial resources, especially with the 1967 defeat (the six days war) and the temporary loss of Sinai, which directed the attention towards rebuilding the armed forces that absorbed most of the financial resources.

4-2-2 Spatial regional development

The impact of the above shifts on spatial regional development in the 1960s is manifested as follows:

- The state was striving towards modernizing the country through industrialization, inspired by the Soviet model of development, making most of the locational choice for the industrial plants based on political decisions, which located some of these industries in Cairo and its suburbs. Examples on this aspect include the Steel and Cement industries located in Helwan, a Cairo suburb, which was known as a spa and now is suffering from heavy pollution, and other polluting industries established

Fig. 4-1: Polluting cement factories in Helwan
Source: http://ar.wikipedia.org

in the North of Cairo, in the path way of the prevailing winds passing over the neighboring housing districts (Serag, 2002).

This reflects the strong top-down approach and the behavior of a central state; when decisions were taken for granted and could not be questioned by professionals.

At the same time, with the majority of investments and industries being directed to Cairo, a clear polarization pattern, with the supremacy of the primate city was evident, which substantiates the argument that this situation reflects the second stage of the Friedman's core-periphery model, discussed in chapter two, which is the existence of one strong center.

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[44] http://www.arabicnews.com/ansub/Daily/Day/010723/2001072337.html , June 2007.

- By mid 1960s, concerns were growing about rapid population growth and the expansion of Greater Cairo Region, which stimulated the preparation of the *structural plan for greater Cairo region*, completed in 1969/70, which was made to resolve the implications of the population growth in Cairo including the expansion on arable lands. Among several elements of the plan, four new cities were planned to be constructed in the desert hinterlands of Cairo aiming to attract four million people, an approach that constituted the the base for the successive regional plans of Cairo until the 1990s (Serag, 2002).

This plan can be situated within the spatial regional development strategies that are geared towards concentrated- urbanization discussed in chapter two, to be more specific as a strategy to realize a form of *rapid deconcentration* to the edge of the existing core agglomeration, in this case Cairo.
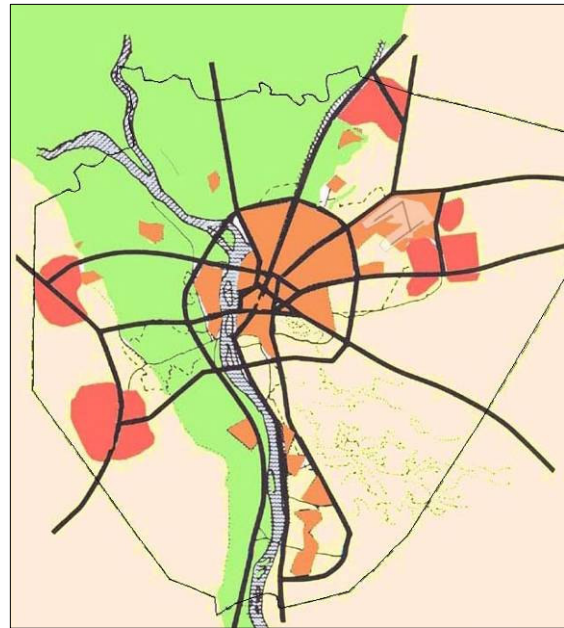
Fig. 4-2: The structural plan for Cairo 1970 showing the four new cities around Cairo
Source: Serag (2002).

- A parallel spatial regional development interventions to face the alarming situation of population growth were the attempts for land reclamation in the Egyptian deserts through constructing human settlements with agriculture as their main economic base, using underground water, mainly in the Western Desert. This intervention aimed to attract four million people from the Nile Valley (Nabawy (2002) and Radwan et al (1997). This was reflected physically in the construction of ten villages in that region throughout the 1960s, and the upgrading of the five larger villages into cities, thus establishing the New Valley Governorate. This intervention is further elaborated in chapter six, as part of the regional development interventions that took place in the study region.

By situating this intervention among the spatial regional development strategies, discussed in chapter two, it is evident that it is a clear example of two main strategies, which try to realize spatial de-concentration of population; with the first being the establishment of small service centers and associated rural development, in this case the upgrading of existing villages to cities and the construction of new villages in such a peripheral region, combined with the second which is the establishment of a new province, based on these settlements, to attract the population.

4-3 Regional development interventions in the 1970s

The 1970s witnessed some critical events in the Egyptian history, which were considered a turning point for the country. After being a socialist country for almost two decades, Egypt, under the rule of Sadat[45], started a slow shift away from socialism and being a central state towards a partially open market economy.

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[45] Sadat was the president of Egypt from September 1970 until his assassination in October 1981.

4-3-1 Political and economic shifts

Attia (1999) illustrated how Egypt at the eve of the 1970s was an authoritarian, centrally controlled and closed state with severely damaged economy and strong involvement in war effort. However, in October 1973 Sadat ordered the crossing of Suez Canal to retake Sinai, a battle that initiated peace talks with Israel to end up with the Peace Treaty of 1979.

After the war, Egypt undertook a new economic policy, which was to bring victory to the home front in the shape of prosperity for all, thereby resolving the major problem of a rapidly growing population dependent on a weak economic base.

The new economic policy was addressed by President Sadat in *the October working paper (1974)* which had three main objectives; defense preparedness (i.e. strong army), reconstruction, and economic development. Among two of the policies mentioned in that paper were: the open door policy that dealt with economic development and the new map policy, which dealt with reconstruction and spatial regional development. The former is highlighted briefly, while the latter is reviewed with some detail because it is considered the building block for regional development attempts that followed in the 1980s.

The following discussion relies on the work of Attia (1999) and the interview held with him in September 2005. The main reason for this reliance was the scarcity of data and analysis on the new map policy, even when the attempt was made to find more research work tackling this policy, the ones that came in hand relied extensively on his work[46]. Attia's line of thought inclines towards the ideas of entrepreneurship and planning, taking into consideration the contextual settings that governs different cities or regions.

The open door policy

The open door policy aimed to introduce reform and make a boost in the Egyptian economy; this was stressed by President Sadat who declared that Egypt's state-dominated economy was too burdened by military spending and bureaucratic inertia to mobilize the resources for an economic recovery. Therefore, the aim of the open door policy was to relax government controls on the economy so as to encourage the private sector and stimulate the inflow of foreign funds[47].

This policy, according to Attia (1999), was symbolized in the equation
Arab capital + Western technology + abundant Egyptian resources = development & progress.
In this process the Egyptian economy was involved in a process of opening itself to foreign investment and profit. The abundant Egyptian resources used in the above equation, not only refers to natural resources but also to space in relation to the vast uninhabited area of Egypt, which is used as the given factor in formulating the new map policy.

Despite the intended shift towards market economics, the state continued to carry out the top-down approach in pursuing its development attempts. Egypt at that time remained state centered in several aspects despite the attempts that were pursued towards decentralization.

However, it was clear at that time that Egypt was already drifting away from socialism and the influence of the soviet model for regional development towards the concepts of open market, though it still kept the five year mandatory plans. Through the setting up of the open door policy, the state policies towards regional economic development were shifting towards Keynesianism, discussed in chapter two, which argues that the free-market system does not self – regulate effectively, thereby necessitating the intervention of the state to promote growth.

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[46] Attia's analysis of the new map policy was part of his PhD research investigating the implementation of the tourism policy in the North West Coast region of Egypt.

[47] http://reference.allrefer.com/country-guide-study/egypt/egypt131.html , February 2006

4-3-2 Spatial regional development :(The new map policy)

The new map policy was a spatial regional development policy attempting to set a framework for a balanced economic, physical and administrative development. It was set to introduce a solution towards the implications generated from the population growth patterns, by acknowledging the pull of Cairo to both investments and people, and the problems generated from this state of polarization and its backwash effects causing inequalities in relation to the other parts of the country, and the scarce agricultural land that was being consumed by the rapid urban expansion.

The development approach

When the making of the new map policy started, international consultant offices were invited to participate. The intention behind this was to prove that Egypt is once again welcoming foreign interventions, be that expertise or investments, which encouraged these interventions to flow into Egypt; thus, realizing part of the open door policy.

Following several studies, it was concluded that it was possible to extend the inhabited areas of Egypt to 35% of its territory rather than the 4% at that time, which reflected the strong polarization of the country, with Cairo and Alexandria as the main primary cities, especially Cairo. Accordingly, the main objective remained the same, which was to release the pressure from the congested Nile valley, Cairo and Delta. To realize this objective, the new map policy pivoted on two main aspects:

- *The first aspect* was to introduce **specific development axes** both in the longitudinal and transverse directions, with three main North-South axes: the Red Sea and Suez Canal, the Nile Valley and the Western Desert axes, four other East –West axes are overlaid on top of the previous ones.

These axes would eventually result in the deconcentration of the country to reach the intended pattern of urbanization over three phases:
  - The first phase was intended to develop the North West coast of Egypt, together with the coast of the Red Sea; however, Sinai was ruled out at that time because it had not been completely retaken.
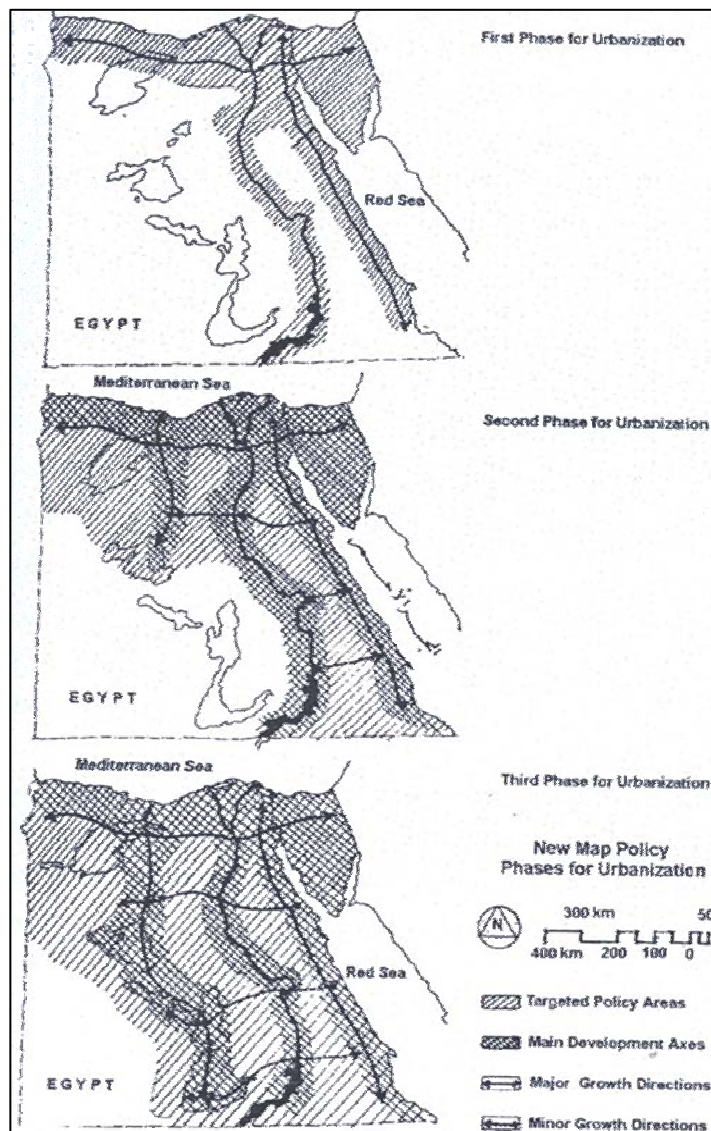
Fig. 4-3: The New Map Policy
Source: Attia (1999)

- The next two phases aimed to construct a parallel valley to the Nile valley, and to include Sinai in regional development in order to reach the 35% needed.

In fact the concrete spatial intervention that started in the 1970s was the reconstruction of the cities along the Suez Canal to allow the repatriation of hundreds of families that fled, during the war, which was part of the first phase of the New Map that reinforced part of the proposed North-South Axis along the coast of the Red Sea.

Attia (1999) argued that this also had a political dimension, in illustrating that the next step of development would be Sinai itself, adjacent to Israel, hence a real peaceful intention yet also a strategic one, by extending the depth of the country from the Nile Valley towards the Sinai peninsula itself.

- *The second aspect* was to develop new towns and plan the expansion of others in the desert along the development axes, as growth poles, to accommodate some 18 millions Egyptians in these new towns by the year 2000. This was accompanied by the planning and starting of construction works of four new cities with different economic bases, targeting to accommodate 1.65 millions by 2000, these cities are located in the desert pivoting on Cairo.

Fig. 4-4: The centre and main districts of Sadat city, which started to function in 1980

The construction of these new towns together with the reconstruction of the cities along the Suez Canal were in fact the physical spatial intervention that took place in the 1970s, and part of the 1980s, however, the implementation of the New Map Policy continued in the following decades with varying accomplishments and results as discussed in the next sections.

To situate the New Map Policy within the spatial regional development strategies, discussed in chapter two, it is obvious that the policy aimed towards de-concentration, which used the development axes and the promotion of new secondary and intermediate towns. It is evident, that in terms of investment the state was willing to disperse its investments over the different Egyptian regions and not to concentrate them in specific places, which according to Hirschman's patterns of fund allocation, discussed in chapter two, confines with the first one.

4-4 Regional development interventions until 1998

The period spanning between 1982 and 1991 witnessed two major events that affected the pace of regional development in Egypt. The first was the full return of Sinai to Egypt as a result of the peace treaty of 1979 with Israel, which led to serious attempts for developing this peninsula in order to integrate it within the rest of the country. The second was the first gulf war in 1991, in which Egypt participated as one of the Allied forces, which was rewarded by deducting a major part of its international debts, allowing the commencement of large scale development projects.

4-4-1 Political and economic shifts

After signing agreements with the International Monetary Fund (IMF) and the World Bank in 1991, Egypt embarked on an ambitious economic reform policy.

Egypt succeeded in implementing a major reform program, which resulted in reducing the fiscal deficit from over 20% in the early 1990s to less than 4% by the end of the decade[48]. Throughout the 1990s, Egypt steadily pursued a program designed to transform the economy by largely expanding the role of the private sector, which had already started in the 1980s but gained momentum in the 1990s. The government dropped its reluctant attitude towards private and foreign capitals and incorporated them in many regional development projects, especially in the large scale interventions of the 1990s to ease the burden on the public budget. The development strategies prevailing at that time are still (until present) situated within Keynesianism, which calls for the state intervention to organize and promote growth.

4-4-2 Spatial regional development

During the late 1970s, 1980s and the 1990s, several regional development plans were made for all the regions of Egypt, trying to change the status quo of concentration in the Nile Valley, towards that of a dispersed de-concentrated pattern of urbanization.

At that time Cairo was (and still is) the major and primate city however, secondary centers started to appear as well, which if situated within Friedman's model would indicate the third stage, characterized by the appearance of secondary growth centers along with the primary one.

Most of these plans were following the broad lines set by the New Map Policy, following the main development axes, with the objective of relocating a tangible population to other regions in Egypt. The government was fully seeking a *deconcentrated pattern of urban development*, discussed in chapter two, thus it undertook the development axis strategies, and as will be discussed in the coming sections, also relied on the strategies of constructing secondary cities and to some extent the introduction of new growth poles.

These three concepts were manifested in three different kinds of interventions at that time: I)formulating regional development plans to cope with the proposed development axes, II) the planning and construction of new cities and III) the initiation of large scale projects in remote areas in Egypt to act as growth poles, these three features are discussed as follows.

I) The Regional Development plans

During the period spanning from the late 1970s till the 1990s, development plans were formulated for the Egyptian regions following the development axes of the new Map Policy.

Two of these plans are given as examples, the regional development strategies for the North West Coast of Egypt and the Sinai Peninsula. These two regions were considered peripheral remote desert regions when their development plans were formulated, which is a common element with the case study region, discussed later in part three.

- The North West Coast

The development strategy for the North West Coast took place between the late 1970s and the early 1980s. As illustrated by Attia (1999), this strategy covers the area starting from the 34th Km west of Alexandria until the Libyan border (approx. 500 km) with an inland depth of 30-50 km. This area is considered a sub region from the Alexandria planning region, which extends from Alexandria to the western borders with Libya. This sub-region in fact extends over two provinces: Alexandria and Marsa Matrouh. This plan is considered as part of the first North West Axis of the New Map Policy in its first phase (figure 4-7).

It had a regional objective that focused on improving the quality of life for the local population; and a national one aiming to develop this region to attract migration waves , hence releasing the demographic pressure off the Nile Valley.

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[48] http://www.usaid-eg.org/detail.asp?id=8#reform , February 2006.

It was planned, that the region's carrying capacity could accomodate 750,000 inhabitants depending on its existing resources and settlements. In that elongated area, a number of towns were identified to be developed into *growth centers* with different economic activities based on the existing regional resources.

According to Nabawy (2002), tourism was an important component in the development of the region with several touristic centers to be established along the coast, in addition to the development of the hinterlands that included some Bedouin settlements.

Fig. 4-5: The North West coast development plan
Source: GOPP (1999)
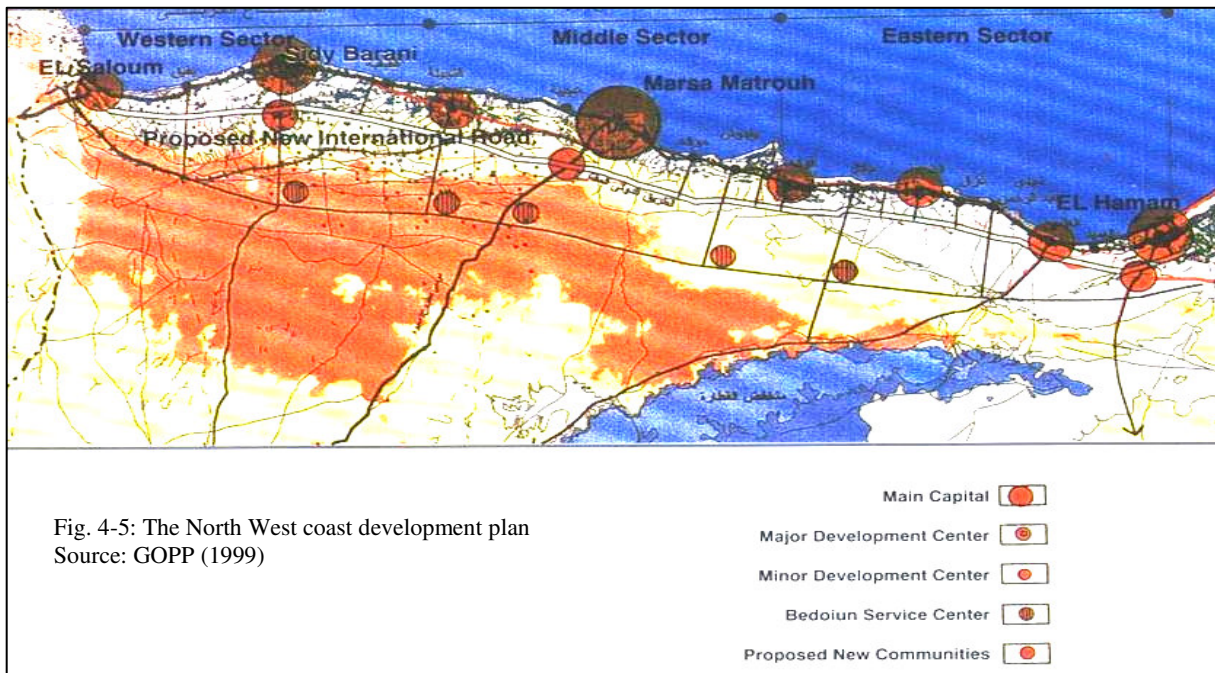
Through the establishment of these growth centers, by either upgrading existing settlements or constructing new ones, a regional hierarchical system of settlements was planned through which regional development can be diffused downwards, similar to the concept of the downward diffusion of development introduced by Hudson (1989) and discussed in chapter two.

However, despite the estimation of the carrying capacity of the region, the government announced that this region could take two to three millions, provided that there were more growth centers and supplementary economic activities, which would vary between agriculture, industry and tourism. This took place to accentuate the government's intervention in this project, despite the fact that it did not conform with the actual facts; a problem that exists within the Egyptian context and is further discussed in the next chapter.

The impacts of the plan

The impacts of the regional development plan for the North West Coast are categorized into three: 1) Physical Spatial Impacts, 2) Demographic Impacts and 3) Economic Impacts, these are discussed partially on the bases of personal experience and familiarity of the region.

1- Physical spatial impact

The main state intervention was the construction of pilot projects for sea resorts to stimulate tourism in that area. However, instead of stimulating international tourism, domestic tourism was the one stimulated, with many Egyptians seeking to own summer houses there.
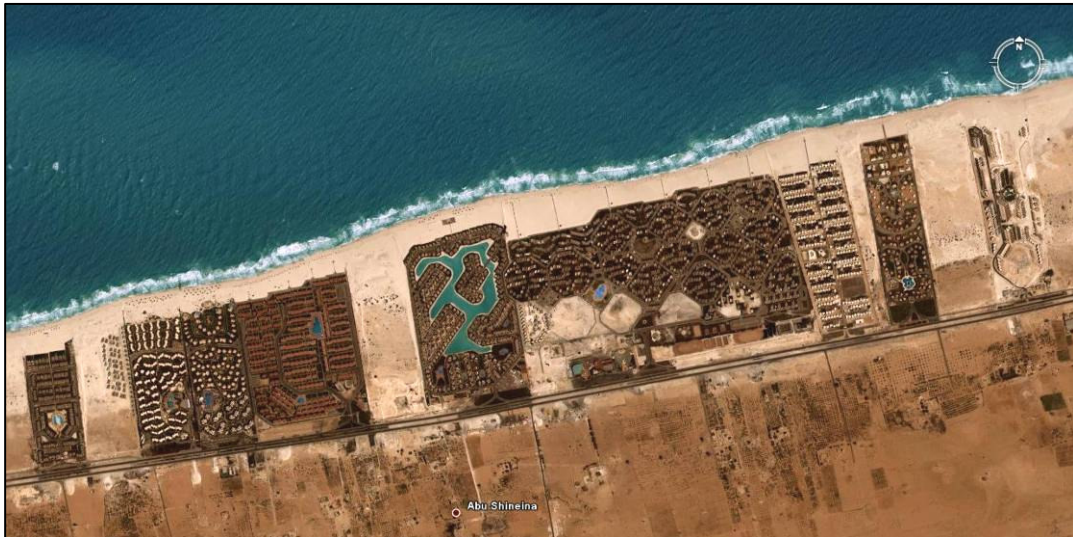
Fig. 4-6: The private resorts on the NWC: Many of which are second houses for middle class Egyptians
Source: Google Earth, 2007

This led to a booming construction industry in the North West Coast; as many private investors and companies invested in these resorts, until the end of the 1990s, which eventually blocked the seafront in many locations.

As for the development of secondary centers in the region, this aspect had been fulfilled on a larger scale, only some existing cities had been further developed such as Marsa Matrouh, which is the capital of Matrouh province.

However, this does not mean that there are no new development centers, in fact one of the cities that is growing slowly but surely is New Borg El Arab city, which during the last decade attracted several industries such as textiles, and hosted a new research center, which led to a gradual increase of its population, who are working in these activities. According to the Alex trade point (2007), the population of the city increased from 7,000 in 1996 to 50,000 in 2002, as a result of the investment and job opportunities created in the city, with good quality of service provision[49].

Fig. 4-7: New Borg EL Arab City with the industrial zones at the east and south and the research center at the west

Unfortunately, most of the minor development centers in the desert hinterlands of the coast have not been developed until present day.

However, despite that the plan was not fully implemented, the built up area of Egypt increased with the construction of massive infrastructure and housing in the North West Coast (among other regions), which changed the image of the regional landscape from virgin lands to a blocked waterfront.

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[49] http://www.alextp.gov.eg/borgdev.html , June 2007.

2- Demographic impacts

With the exception of cases similar to New Borg EL Arab city, there was no tangible demographic change with limited, or even nil, effects on the population distribution situation in Egypt. However, there is an obvious seasonal migration trend in the region during summer, during which people from Cairo and other parts in Egypt move to their properties in these residential compounds, which according to Mustafa (2007) are at least 120 compounds along the coast[50],;thus turning it into a lively region. This in its turn stimulates seasonal migration for workers in service sectors and private trading activities, however, this situation only lasts for three to four months a year, after which these resorts/settlements are almost deserted for the next season, such a waste sparked the calls for reinvestment schemes of these assets, in which recent attempts to attract European tourists started to take place.

Fig.4-8: Water Front of Marina resort, which is the largest in the NorhWest Coast, during summer time

3- Economic impacts

These development initiatives had some positive economic impacts on the region. On one hand it created several seasonal jobs and some permanent activities e.g. those in New Borg EL Arab city; on the other hand, some of the leading resorts/compounds received state investments including infrastructure and construction works, which had reasonable economic return. Thus allowing for further interventions to be funded in this region and others as well.

In fact, until mid 1980s, before the development process took place, many people, now owning houses in the North West Coast, used to spend their holidays abroad; however, with this development taking place the money that would have been spend abroad stayed in Egypt, adding to the national revenue[51].

In general, it is argued, by many scholars including Attia (1999), that the implementation of the plan differed from its making, with many original aspects being directed in different ways from the original plan e.g. the touristic resorts. Many aspects in the plan had not been carried out, however, in the few cases they were fully implement e.g. the case of the new city discussed above, led to the initially foreseen outcome.

- Sinai Peninsula

The Development of Sinai comes as part of the Northern East-West Development axis of the New Map Policy. Due to its strategic location, several attempts were made for its development after the peace treaty with Israel in 1979. Sadat acknowledged once, that the development of Sinai, including its urban development and increasing its population density, would transform Sinai into a part of Egypt's strategic depth.

The first of these attempts took place in the 1980s, by acknowledging the peninsula's natural assets, mineral resources, and its strategic geographic location, as potentials for regional development.

Alaam et al (1995) mentioned that the attempt aimed to locate 100,000 inhabitants, through establishing and developing 34 human settlements, 18 of which were to be coastal, while the rest were inlands. Sinai was to be divided into five zones with five different economic bases.

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[50] http://www.egypttoday.com/article.aspx?ArticleID=6563 , June 2007.
[51] Based on a discussion with Prof. El Wakil, August 2005.

However, this plan was never realized mainly because of shortage in funds, as its implementation was supposed to rely totally on governmental funds, since there was a reluctant behavior towards incorporating the private capital in this attempt, which turned to be exhausting for the total national budget.

By 1994 another development strategy was formulated targeting the year 2017 with a multi-economic base to stimulate the attraction of 3.2 million Egyptians.

The government would provide 10 to 30% of the infrastructure, while the rest to be supplied by the private sector,

The plan introduces four development axes in Sinai together with growth poles to be developed either from the existing settlements or through introducing new settlements in limited numbers.

One of the major steps taken for stimulating the development of Sinai was constructing El Salaam Canal that brings the Nile water into the peninsula [52]. This project will be discussed briefly in a later section.

The strategies of this plan can be situated within the strategies of urban de-concentration, discussed in chapter two, which rely mainly on the concepts of development axes and growth poles, while aiming to create a downward diffusion of development through the proposed hierarchical system of settlements.
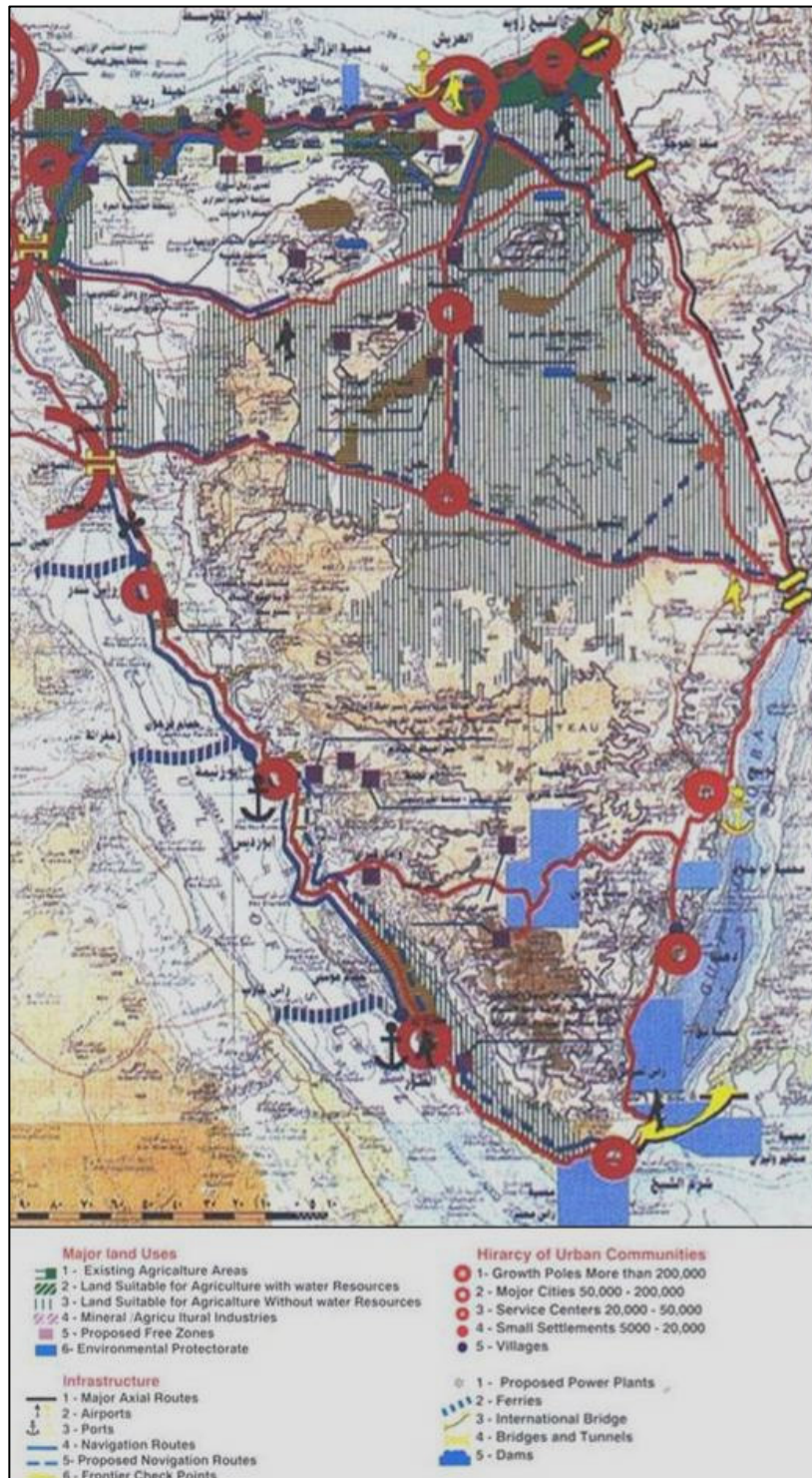
Fig. 4-9: Sinai development plan (1994)
Source: GOPP (1999)

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[52] El Salaam means Peace in Arabic, so El Salaam canal means the Canal of peace.

The impacts of the plan

Since this plan has been formulated only a decade ago i.e. 1994, it is difficult to make a critical evaluation of its outcome or to know if it will be fully implemented or not. However, based on current facts and observations, it is possible to argue that some aspects of the plan are being implemented, with visible impacts on spatial, demographic and economic aspects.

1- Spatial impacts

Several cities in the peninsula were developed, especially those by the Red Sea coast, by capitalizing on the natural assets of the sea. Such cities became internationally famous, such as Taba, Dahab, RasSedr and Sharm El Sheikh, with the later not only being famous because it is a resort but also due to its political importance[53]. Other coastal cities were developed as Port cities, mainly the city of Nwaibaa on the Gulf of Aquba.

Most of these cities received national and international investments for the construction of touristic resorts, which unlike the North

Fig.4-10: Sharm EL Sheikh coastal development
Source: www.travco-eg.com, June 2007

West Coast, were successful in attracting international tourism.

2- Demographic impact

It is difficult to realize the effect of this development on the region; however, according to statistics the population in Sinai has doubled between 1986 and 2007 reaching 410,000 inhabitants after being 200,000 in 1986[54]. Because of the job opportunities created to support tourism, many Egyptian and foreign job seekers moved to the area[55]. However, it is questionable whether the targeted population of 4 millions can be reached by 2017.

3-Economic impacts

As discussed earlier, with the touristic development of coastal cities which became world famous, tourism industry indeed contributed to enhancing the economic situation of the region together with the creation of many job opportunities. However, the reliance on a single economic base (tourism) is critical, because of the current regional conflicts that raise speculations on the fragility of the tourism industry, an aspect that also affects the study region and is discussed in chapter nine.

II The new communities

The construction of new urban communities, referred to as cities by GOPP (1999), started in the second half of the 1970s as the second aspect of the New Map Policy and is still taking place until present. Currently, there are approximately 17 new communities and cities in Egypt constructed mostly at the edge of the desert; aim to release the pressure on the existing settlements of the Nile valley and Cairo by attracting population from these areas through the creation of job opportunities based on their economic bases, which also increased the build up area of Egypt.

GOPP (1999) illustrated three types of new communities constructed at that time in Egypt:

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[53] The city witnessed several international summits dealing with the Israeli-Palestinian conflict and most recently the situation in Iraq in May 2007.

[54] http://www.world-gazetteer.com , June 2007.

[55] http://weekly.ahram.org.eg/2003/652/li1.htm , June 2007.

- *Independent cities,* which are located far from the existing cities of the Nile Valley; to allow them to be self-contained urban units. These cities are located in the desert e.g. Sadat city and the 10th of Ramadan city, and have their own economic bases, mainly based on diverse industries.

- *Satellite cities;* that are located within relative proximity from the existing cities, e.g. Badr and El Obour cities. These are mainly founded around Cairo to intake some of its excess population.

- *Twin cities,* which are constructed, in most cases, in the desert hinterlands of the existing cities in the Nile Valley with specific economic bases, which have the benefits of being close to existing infrastructures and services, and also maintaining the social ties between migrant population in the new cities and their relatives in the old one, e.g. New Asuit and New Damietta.

It is worthy to mention that the state intervention in constructing and developing these cities varied. At the early years of development, the state

Fig. 4-11: The New Settlements in Egypt
Source: GOPP (1999)

invested in both infrastructure and construction; however, in later years, the state invested in infrastructure and part of construction costs, while the rest was done by the private sector[56]. Most of the new cities were planned with a capacity of 250,000 to 500,000 inhabitants; however, in many cases, even half of the targeted population had not been reached (Serag, 2002).

Attia (1999) argued that even with the construction of the new cities that aimed to fulfill part of the new map policy, the same urbanization pattern continued to prevail along the Nile Valley and the Delta. He argued that only 20% of the targeted population of the new settlements had been reached with the population distribution remaining the same with almost no change over three successive decades until 1996. There had been many arguments trying to explain why the objectives of the new cities could not be fulfilled completely, most of the arguments referred to the shortage of development management of these cities together with the proper implementation mechanisms for their objectives[57].

But the construction of these settlements had some positive outcomes, despite that the targeted population in most of these cities had not been reached, the build up area of Egypt increased by 20%, giving a different image to many former desert areas (Radwan et al, 1997). In most of these cities, the economic industrial bases were developed successfully leading to the creation of new job opportunities that were estimated to be 227,000 jobs (GOPP, 1999).

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[56] This is based on a discussion with Prof. EL Khourazaty, September 2005.
[57] These arguments are based on a discussion with Prof. El Wakil in September 2005.

Due to the lack of development management in the new communities and cities around Cairo, the majority of employers preferred to invest in private transportation facilities to transport their employees daily to the industrial zones than to provide housing for them in these cities (Serag, 2002).

However, as discussed earlier, some new cities are developing gradually such as New Borg El Arab city, discussed earlier, and New Damietta which is the twin city of Damietta in the Delta. The economic base of both cities depends on the furniture industry, which traditionally started in the old city, and now with the new city having the same industry but also located next to the Damietta port on the Mediterranean Sea, the products of the city

Fig.4-12: The city of Damietta by the Nile and its twin city New Damietta by the sea in the Delta

target both national and international markets. This is also accompanied by an accelerating population growth, because of the strong ties with the old city and the favorable location by the sea [58].

III Large scale national projects

The expansion towards the desert in Egypt is ideologically linked with agriculture in what was and still known as "Greening the Desert".

In many development plans for the Egyptian regions, agriculture was considered one of the main economic bases that should be developed, in many cases, part of the plans included the establishment of rural communities, a good example on that is the case study region that is discussed in chapter six. In several cases, attempts were made to secure water resources for these communities, other than the traditional underground water, either within the frame work of the regional development plans or as new initiatives to develop new communities in the desert, which would later be incorporated within a national or regional development plan.

These large projects funded by the state, represent a typical characteristic of the center down development theories, discussed in chapter two, which stress on the idea that development usually involves large scale investment projects; in fact this has been taking place in Egypt since the 1960s. Two of these projects are briefly discussed in this section.

1- El Salam Canal

The main aim for this canal is to provide enough water for the cultivation of 260,000 hectares, 400,000 of which are located in Sinai, while the rest is in main land Egypt.

This canal starts from the Damietta branch of the Nile and continues to the East into Sinai. The canal passes underneath the Suez Canal (42 meters) transporting 19 million m³ of water daily to Sinai, as of October 1997. It extends 155 Km inside Sinai in addition to 87 Km inside Egypt, and is argued to be of a major contribution to the development of North Sinai (Gouda, 2000).

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[58] This is based on a speech given by the Governor of Damietta Prof. El Bradey, in the ARUP conference in Cairo, October 2006.

This canal is being constructed with both public and private capital, with a major percentage of Kuwaiti and Saudi investments, which reflects a concrete deviation of the government's policy towards private investment, as mentioned earlier[59]. The construction of this canal comes along the Northern East-West Development axis of the New Map Policy passing through North Sinai.
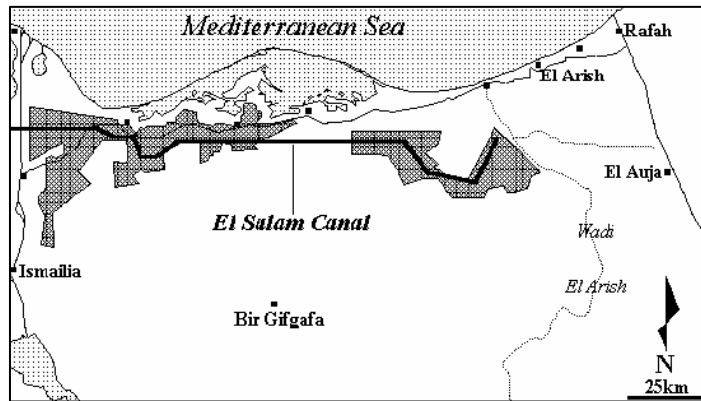
Fig.4-13: The path of EL Salam Canal in Sinai
Source: http://www.tortoisetrust.org, June 2007

2-The Toshka Project

Merdan (1999) mentioned the main objective of this project, the creation of another spine of water in the Western desert, parallel to the Nile, starting near the Aswan dam lake and ending in the Frafra Oasis, which is foreseen to promote spatial regional development in this area[61]. This is done through the construction of the South Valley Canal of Toshka, with Emirati and Saudi investments.

It is anticipated that upon completion, hundreds of thousands of hectares would be reclaimed, while constructing rural communities based on agriculture-related actives[62].

The spatial planning for these communities is underway with already some farming activities taking place in the experimental farm owned by a Saudi investor in that region.
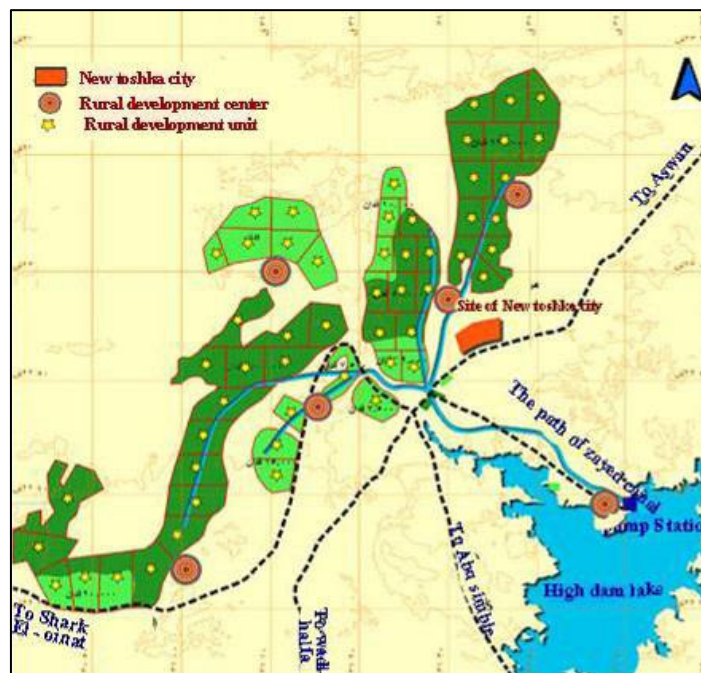
Fig. 4-14: Toshka project in the South of Egypt, West of the Nile
Source: Serag (2005)

However, this project is considered controversial. In the interviews held with Egyptian academics and professionals in 2005. On one hand, some opinion questioned the feasibility of this project in starting new communities in such a harsh desert environment from scratch and whether people would find enough incentives to go there or not, they also highlighted that the project is based on political decisions, regardless the difficulties of conducting such a large scale construction.

On the other hand, some opinions were in favor of the project and advocated it as both a mean to expand the populated area of Egypt and to help in its national economic development,

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[59] http://www.sis.gov.eg/En/Pub/magazin/summer1997/11020600000000011.htm , June 2007.

[61] The name Sheikh Zayed Canal comes from Zayed the late president of Emirates who was one of the major investors in that canal. It is to be mentioned also, that there is a planned new community in that area called Toshka that is to be based on agriculture, and already experimental agriculture is done there by Arab money.

[62] http://www.presidency.gov.eg/html/projects.htm , June 2007.

substantiating this by the fact that the experimental farm is already functioning and exporting abroad.

4-5 Development & urbanization map of Egypt 1998

The making of the current national development policy was completed in 1998, and is supposed to be the main reference for the different regional development projects and interventions in the Egyptian regions.

As illustrated by GOPP (1998), this policy which is known as the *"Development and Urbanization Map of Egypt 2017"* focuses mainly on developing desert and remote areas, as a continuation of the main Egyptian line of development aiming to increase the inhabited area of Egypt to reach 25% instead of 5% .

The plan also has a secondry objective that is the upgrading of existing urban centers suffering from formidable problems, hence, addressing regional inequalities in terms of inadequacies of utilities and essential services, and managing future urban growth to prevent the emergence of informal settlements on valuable agricultural land.

4-5-1 The plan

The starting point of this plan was the assumption that the population increase by 2017 will reach 24 million inhabitants, taking into consideration that the current urban communities and those under construction, will only be able to take half this number (GOPP, 1998).

Thus, the GOPP argued that the main solution to intake this increase is the desert[63].

To locate suitable areas for constructing and developing new communities, the GOPP carried out a number of studies covering the whole country to point out and categorize these locations according to their fulfillment of a set of criteria composed of six main factors that should be realized within the most optimum location. These factors are:

Fig.4-15: Development priorities area
Source: GOPP (1998)

- *The dispersion and creation of geographic and demographic balance.*
- *Fast urban development with minimum costs* (i.e. expansion of existing cities on desert hinterlands).
- *Urban development with maximum economic efficiency* (by constructing twin cities within close proximity of the existing ones to benefit from their infrastructures and services).
- *Strategic and political aspects* (which are manifested in developing strategic areas at the Egyptian frontier regions).
- *Socio-economic justice and equity within different regions.*
- *Urban development in a balanced economic way* (multiple economic bases).

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[63] This statement by GOPP does not reflect all the professionals' opinions in Egypt. One of them is Prof. Bakry, the president of the Egyptian green party and one of the president's consultants, he thinks that the optimum way to intake excess population is to direct them towards the coasts of the Mediterranean sea and the Red sea. In saying so he argues that the Egyptian deserts can take one to two millions maximum, as from his point of view that would be the carrying capacity of the possible inhabitable areas of the Egyptian deserts, after eliminating other areas of both harsh climate and topography (An interview with Prof. Bakry- November 2003).

Accordingly, the locations suitable for spatial regional development were prioritized according to the degree to which the location would fulfill the above criteria (Figure 4-15); in addition, the priorities were also set according to the availability of resources that could be used as development potentialities. Based on these criteria, the different locations in Egypt were prioritized, with the settlements of the case study region receiving the least priority for development, as their potentials were considered on the level of each group of settlements, instead of assessing the region as one coherent unit.

The study eventually introduced a reference map with the possible locations of 44 new cities; also identifying possible locations for land reclamation, others for industrial and mining and touristic activities, while identifying historical sites and natural protectorates. Another part of the study included a plan for physical infrastructure to ensure accessibility to the development locations in Egypt[64].

To situate the strategies incorporated in this plan among those discussed in chapter two, the spatial regional development strategies, like the previous ones, aim to achieve de-concentration through establishing secondary and intermediate cities, while also trying to introduce small service centers that are associated with rural development.
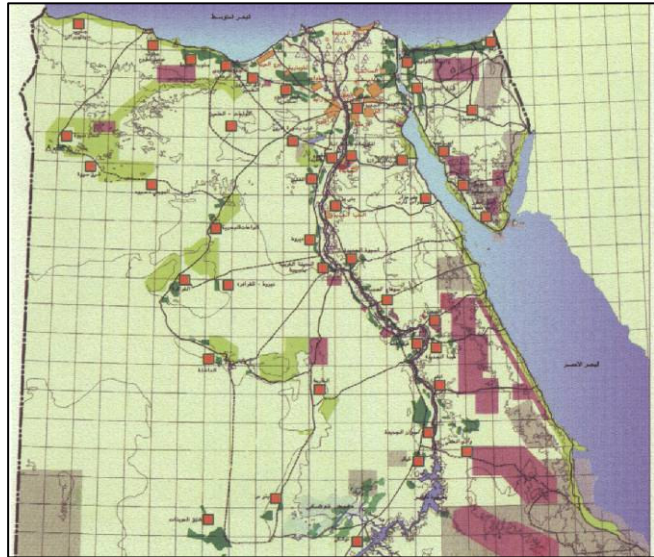
Fig 4-16: Egypt's map of development, with the locations of the new settlements
Source: GOPP (1998)

4-5-2 Critical views on the plan

In principle most scholars and professionals agreed on the objectives of the plan to release the population pressure from the Nile Valley and Delta by spreading the population on other regions in Egypt. However, the plan had sparked some criticism by the academic community in relation to its strategies and dynamics. These are discussed as follows.

- Some academics expressed their concern, during the interviews held with them in September 2005, that the plan did not take into consideration the previous intervention proposed by the New Map of Egypt. However, when the GOPP officials were confronted with this argument, they mentioned that the logic of the New Map Policy was taken into consideration, but the proposed locations of settlements did not completely coincide with the development axes, since their settings depended on precise studies supported by GIS.

- Another argument raised by Abdel Moety (2002) refers to contradicting objectives in the new plan. She argued that *dispersion and creating geographical and demographic balance* based on the expansion towards the desert contradicted the *fast urban development with minimum costs* and *urban development with maximum economic efficiency* which were totally based on creating new communities closer to existing ones to benefit from existing infrastructures.

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[64] In a meeting with Prof. Demairy, the former Minster of transportation and mobility, he mentioned that the vision towards upgrading and planning the physical infrastructure networks, aims to establish accessibility to all the capitals of the Egyptian governorates, yet, emphasizes the expansion of the Nile valley horizontally into the desert hinterlands. Interview in November 2003.

- There is no relative importance between the different objectives, thus having the same weights of assessment makes the concept of development priorities superficial.

- It is argued that the development priorities of the Egyptian regions are not coherent; in fact the priorities given to the different regions are superficial. This argument is substantiated through setting some regions that were granted low priority in the plan on the top agenda for development projects such as the case study region, which is even promoted politically.

- The map referring to the possible locations of 44 new cites raised some controversy as well, as the immediate understanding was that these cities are intended to be constructed by 2017, which made many academics and professionals question the possibility of achieving this objective. However, an official explained that the intention is not to construct all these settlements by that date, but rather to start in constructing some of them by that date. He even mentioned that the function of this map is only to assist in the site selection of the intended settlements, but not necessarily construct all of them. For this he gave the example of the new city at Toshka, stating that it was selected after looking at 18 locations identified by the map in the region and selecting one of them. In spite of this logic, it is still questionable if this indeed was the case, since the Toshka project started a year earlier than the completion of this map, which implies that the location was later integrated in the plan.

- Finally, as one of the academics interviewed in 2005 argued, it is perhaps more important to focus on the already existing under-populated settlements, such as those in Sinai or in the Western desert (case study region) by developing them and creating incentives to attract the desired population, instead of constructing communities from scratch, which coincides totally with the rational of this thesis.

As a matter of fact, despite the changes that took place in the economic and political systems, the regional development and regional planning in Egypt, until recent, were mainly based on the top-down approach, in which the planners were just technocrats and the planning process lacked the integration of local dynamics, the principle of subsidiarity, public participation, etc.

In the previous decade, public and private cooperation for development started to materialize, however, this cooperation was in the implementation process rather than the planning, as seen in the next chapter, until recent, investors were only invited to participate after the planning process had been one, and eventually they had their role in implementation or they would start their own initiatives.

4-6 Regional development in the 2000s

The mechanisms of the regional development and planning process taking place in the 1990s continued through the first few years of the 2000s, however, by 2002, a gradual shift in the planning process started to take place incorporating the aspects of local participation and decentralization, among others, within its mechanisms.
In fact there have been several attempts for decentralized forms of development, in the 1980s and 1990s with external funding and involvement of donor organizations, such as the USAID and the UNDP, focusing mainly on specific projects; however, these attempts had modest impact and outcome (EHDR[65], 2004). Recently, there have been other forms of cooperation with International development agencies e.g. UNDP, but on the local and provincial level. This cooperation was one of the causes in changing the Egyptian top-down approach of planning; this is discussed in the next chapter with an exemplary case that took place in 2006.

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[65] EHDR stands for Egypt Human Development Report.

4-6-1 The current attempts

It is argued that the prevailing Egyptian line of thought continues to focus on lowering the population densities in the Nile valley and Delta by attempting to construct new communities in the desert, while creating job opportunities in them to attract people; this is seen in two contemporary cases:

-The desert hinterland villages

It is a project that started in 2005, in which 400 villages are planned for construction in the desert hinterlands adjacent to the Nile Valley in seven governorates in southern Egypt. The main objective is to attract four to five million people into these villages. The rational of the planning refers to the possibility of extending existing infrastructure and irrigation networks from the Nile valley to these villages, hence, providing sufficient water for agricultural development[66]. This attempt is situated once more within the spatial regional development strategies of deconcentration, discussed in chapter two, which tries to realize deconcentration to the edge of the desert through the construction of small service centers in support of rural development.

It is clear from this case and some of the previous attempts, that the reliance on agricultural activity as a single economic base for development is an obsession through most of the regional development interventions in Egypt, which many scholars criticized.

For example, Nabawy (2002) argued that the development ideology based solely on agriculture should be changed, due to the relative shortage of water resources and the un-guaranteed continuity of cultivation in the desert. The reliance on this activity alone was obvious in the successive regional development attempts that took place in the study region, which eventually had not fulfilled many of its objectives as discussed in chapter six.

- The development of a National Road

It is a recent proposal presented by Prof. EL Baz[67] who suggested the construction of a national road parallel to the Nile Valley, with transverse connections to link it with cities in the Nile Valley. The path of this road is determined based on studies made to determine the suitable topographic locations through which this road can pass. At the intersections of the road with the transverse links, new settlements are to be built, each of which would have its own adequate economic base that are to be linked to the national markets through the transverse roads. The settlements are to be supplied with water through a national water pipeline from Lake Nasser at the Aswan High dam,[68] in addition to other needed infrastructures (figure 4-17).

In parallel to his suggestion, there is also an intention among the government to construct a high speed train operating from Alexandria in the North to Aswan in the South. The path of this railway is close to that of the road, to ensure a high level of accessibility in this region.

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[66] http://www.sis.gov.eg/Ar/Pub/yearbook/ybook2006/110104000000000016.htm , June 2007.

[67] **Dr. Farouk El-Baz** is a Research Professor and Director of the Center for Remote Sensing at Boston University, Boston MA, U.S.A. He is Adjunct Professor of Geology at the Faculty of Science, Ain Shams University, Cairo, Egypt. He is also a Member of the Board of Trustees of the Geological Society of America Foundation, Boulder CO.

[68] Mohamed, A, 2005, Al Ahram Al Arabi Issue 444, an interview with Dr. F. EL Baz: Populating the Western desert in Egypt, Cairo.

Despite that this proposal is extremely ambitious it reflects the line of thought of most scholars and experts in getting the population to the desert areas out of the Nile Valley.

It is to be mentioned that this proposal is gaining momentum since 2006; with noticeable media attention to the extent that Prof. El Baz was hosted on a local television station to explain it and to respond to questions concerning his ideas. Should this attempt succeed, a main aspect of the New Map policy will be realized on the ground; as this road is simply considered a development axis.

Fig.4-17: The National Development Road
Source: Al Ahram Al Arabi (2005)

4-7 Regional development and regional planning

Through the regional development interventions tackled in this chapter, it is evident that despite the economic and political settings that prevailed over consequent decades, the majority of the regional development attempts were geared towards deconcentrating the population from the Nile Valley to the rest of the country. This was reflected in the different attempts applied to the desert regions in Egypt, such as Sinai, the North West Coast and the New Valley (study region), which followed different spatial regional development strategies mainly the development axes introduced by the New Map Policy by establishing new cities, and in some cases, investing in large scale projects, all with the aim of attracting people from the Nile Valley.

Despite these ambitious attempts, their outcomes were modest, in many cases, these plans failed to realize many of their objectives and even took different turns from the originally desired outcome e.g. North West Coast. This might be attributed to the prevailing (until recent) approach for spatial and regional planning that is based on the top-down approach and setting of all plans in Cairo, even when the country changed from a controlled to an open market economy. However, it is important to stress that these attempts and plans represented a clear tradition and line of thinking for regional development and planning since the 1960s, which is an undeniable advantage that several other countries lacked at that period. They reflected several positive aspects as well; for example, their success in breaking the isolation of several remote regions and increasing the built up areas in Egypt,

It is also evident from the previous discussion that the bottom-up approach of development and the ideas of another types of regionalism were mostly absent until the late 1990s and early 2000s when important shifts in the Egyptian planning system started to take place.

It is argued that the spatial and regional planning process in Egypt had many shortcomings, which eventually reflected on the realization and the implementation of the regional development plans. This process is discussed and analyzed in the next chapter in order to understand the main reasons for the modest success of the produced plans.

At the same time, the current shifts in the planning approach in Egypt towards incorporating aspects like decentralization and public participation in the planning process are discussed, so as to investigate a better way for the planning process, hence, the realization of future plans.
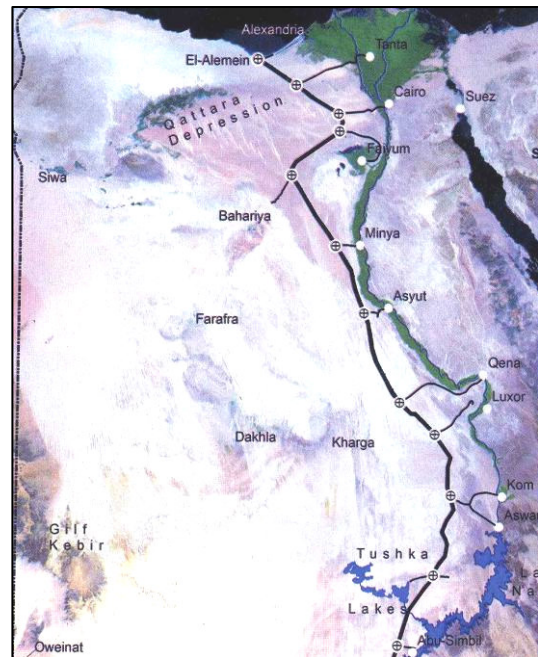
V- Regional Planning Process in Egypt: a further evaluation

5-1 Introduction

The previous chapter reviewed the regional development interventions that took place in Egypt over the last four decades, showing how in many cases they had not been completely realized. This chapter discusses the reasons for the (partial) failure of these plans, and why they could not fulfil their objectives. This is done through analyzing the regional planning process in Egypt, in terms of its reality and approach, while understanding its shortcomings. This is coupled with an analysis of the related actors that were involved in the process to understand the overall settings of the plan making process.

To conduct this analysis, the methodology used is composed of the following different parts that complement each others:
- Studying the legal documents regulating the regional planning process in order to contrast them with the actual regional planning process that took place in reality.
- Describing the actual plan making process based on personal experience of participation in the making of urban plans together with the attendance of some plan-presentation sessions in the period of 1999-2003.
- However, the main part of this study is based on the interviews conducted in September 2005 with government officials, academics and consultants who are involved in the planning process. Through their input it was possible to understand the regional planning process and its drawbacks. Fifteen interviews were held, which included three interviewees from the state's General Organization of Physical Planning (GOPP) and 12 Professors who are also consultant planners from four Egyptian Universities, which included two from Cairo University, two from El Azhar University, one from Menoufeia University and the rest from Ain Shams University (see annex 1 for a detailed list of participants). It should be admitted however, that this method has its limitations, since this type of selected sample gives the notion of *privileged witnesses*, in which other possible relevant opinions might have been bypassed or not included in the discussion(see annex 2 for the questions of these open ended interviews). Accordingly, it was not possible to confront the opinions reflected, which made it difficult to verify the possible falsifications of facts that might be given by the interviewees. It would have been better to use the Delphi technique, which allows confronting opinions against each other, without a direct confrontation between the interviewees, however, mainly due to financial and time restrictions, and practically this method asks for too much work, energy and time from the interviewees, which were not available to many of them especially the government officials; thus, it was not possible to pursue this approach within this research.

Having done that, the chapter then analyzes the recent shift and transformation that is taking place in the planning process, which is adopting a bottom up and decentralized approach instead of the traditional centre-down approach. This is done by discussing three benchmark projects to show this transformation; the discussion is also based on interviews with participants of these projects and official documents. Finally, a recent case of setting provincial development plans within the transforming system, which took place in December 2006 is discussed based on personal involvement in the process.

This is done to understand the transforming Egyptian planning system within which a regional development approach based on networking is proposed and discussed in the next part of this research.

5-2 Regional planning from a legal perspective

In terms of regional planning, two main laws are supposed to be directly organizing the process, the first one is Urban Planning Law number 3 (1982), while the second is Local Administration System Law number 43 (1979), the affiliation of regional planning process to these laws is reviewed as follows.

5-2-1 Urban Planning Law (1982)

Despite that this law extensively regulates urban physical planning; it barely tackles the regional planning process. The law only stresses the importance of regional plans and the regional dimension when physical plans are in the making (first structural then master plans), for the cities and villages. The law states that the physical plans for these settlements should be made in relation to the settings of their governorate (province) and region or their surrounding regions, and to take into account what is decided in the official regional plans[69].

Unfortunately, this law does not elaborate or explain the legal aspects or the contents and role of regional plans, not to mention, the lack of legal explanation to the planning process on the regional level, which is elaborated in detail with a clear stress on the spatial aspects on the local level.

5-2-2 Law of Local Administration System (1979)

In contrast to the previous law, this law deals with regional planning in a detailed way, but, it basically tackles regional planning from an economic and administrative point of view.
Egypt is divided into economic regions; each is composed of one or more governorate (province), and each region has its capital according to a decree issued by the president.
The law regulates the regional economic planning of these regions through a set of established bodies; the two most important are:

a) The regional planning organization, which is established in each of the economic regions and carries out the needed research, analysis and studies to identify the potentials and resources of the region, and suggesting the needed projects for its social and economical development.

b) The regional planning committee, which is headed by the governor of the region (annually shifted between the governors of the governorates of that region), the governors of the governorates, the chairmen of the local councils of the governorates, the chief of the regional planning organization and representatives from the different ministries.
This committee is responsible for the coordination between the governorates in the region and setting their development priorities to finally make the development plans for the whole region according to the available funds. The committee follows up the implementation of the plans and studies the possible modifications that could arise.

Furthermore., coordination between the bodies of each region could be facilitated by the upper tiers of the government; for example, the Prime Minister can take any decision to coordinate between the different governorates in relation to services or commodities and common projects. Aside from that, the Governor of the region can call for the formation of a joined committee to run the common projects between the governorates, cities or even villages, this committee is composed of elected members from each local council together with a sufficient number of experts related to the project.

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[69] This discussion is based on the articles of the urban planning law (1982).

At the same time, on the Governorate level, a bottom up process should take place in setting their plans in the following manner:

- The local governments, of villages and towns, determine their needs and set them up according to priority in a local plan that is acknowledged by their local councils and would then be passed to the local council of the governorate itself. This plan should be compatible with national or regional plans.

- The planning bodies in the governorate, together with the regional planning bodies, discussed earlier, and the specified ministries, study the local plans and projects suggested within them, hence coordinating between the different sectors to prepare the annual plan and budget and pass them to the local council of the governorate and the committee for regional planning to acknowledge them.

- After the local councils approve the plans, they are then passed to the Ministry of Planning who incorporates them with the national plan, after which each governorate carries on with the approved plan and follows it up[70].

It should be mentioned that the notion of plans within this law refers to economic programmatic plans, in which development projects are identified to fulfill certain objectives, then situated within an annual budget plan to allocate the necessary funds for them.
Therefore, it is obvious from these legal settings that a remarkable emphasis is made on the role of regional economic planning but with a separation from regional spatial planning.

An interviewed professional/academic explains that this type of programmatic economic plans are in the form of written documents based on elaborate calculations, with few if no illustration of their spatial location and impact. As such, they can be considered very bureaucratic and based on a strict rational approach, which suffers from several shortcomings, eventually failing to function properly. This notion will be further elaborated in a later section.

5-3 Making regional plans in reality

Egypt is divided into six planning regions, (figure 5-1), to facilitate the making of proper studies and analysis for each region[71]; it is supposed that these regions represent both the economic and physical planning regions.
The following sections discuss how regional plans are made in reality from both a spatial and an economic dimension and the relationship between them.

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[70] This discussion is based on the articles of the Local administration system law (1979).
[71] Ain Shams University, Faculty of Engineering - Urban Planning Department (2006), *Regional and Urban planning for Damietta Governorate,* Cairo.
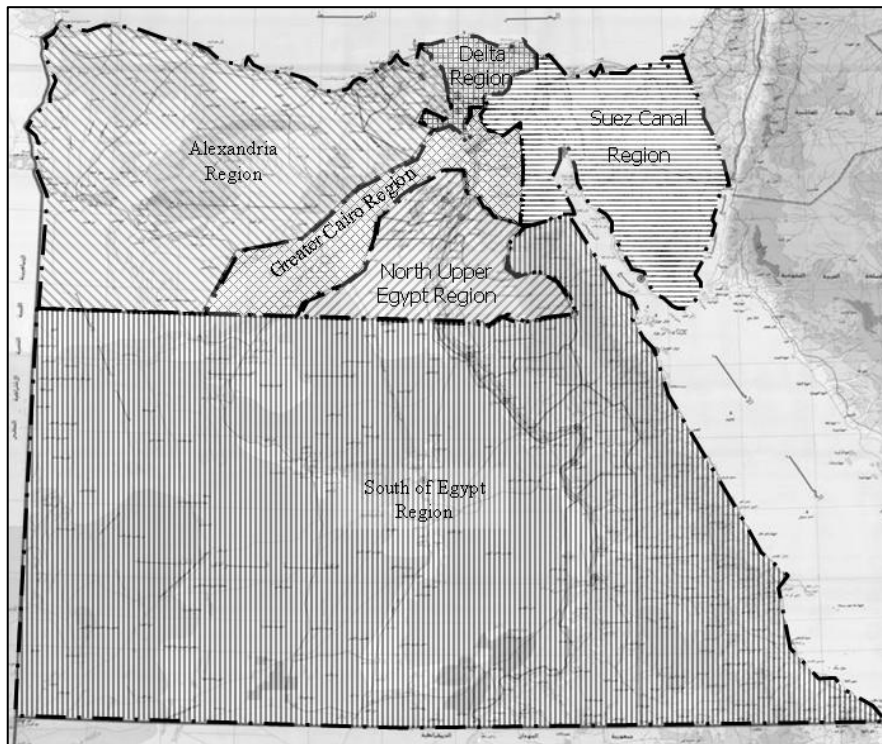
Fig.5-1: The Egyptian planning regions

5-3-1 Regional plan formulation: the spatial dimension

The General Organization for Physical Planning (GOPP) established seven planning departments in correspondence to these regions, each would handle the planning of its region, however because of the lack of sufficient cadres and staff the GOPP assigns consultants to prepare the plans for them.

In order to get a clear idea on the planning process that took place until recently, a series of interviews were held with some Egyptian Planners and consultants. One outcome of these interviews illustrates that regional planning was done similar to that of city and town planning, but it looks to the region as a whole with what it includes of governorates, the level and area are bigger, but the technique of work is the same[72].

The regional planning process could be summarized as follows:

a) The GOPP assigns a planning team with different consultants and experts, e.g. economists, urbanism, and sociologists; they meet with the local authorities to get their demands.

b) They prepare several reports on existing situations, and pass them to the planner who uses the reports to make the regional plan, which defines the locations and sizes of the human settlements in that region, the necessary interventions in terms of regional infrastructure (e.g. regional road networks, regional railways and airports), and a general land use scheme, as requested by the GOPP, in terms of the possible locations for activities and economic bases (e.g. agriculture and industry), etc.

c) The plan is revised by the GOPP officials who give preliminary comments, which the planners have to modify.

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[72] This is also based on personal experience, during to previous involvement in formulating physical plans on the city level in the period 1999-2003.

d) The plan would be presented in front of the governor(s), the local councils and the executive committees of the governorate(s) involved in the region to either acknowledge it or ask for modifications. The process is similar to planning an existing city, but the involved parties (actors) would be different.

e) The planners carry out the modifications and the plan is acknowledged by the local councils, the governor(s), then the GOPP and finally the Minister of Housing.

At this point, the role of the planners is finished, since the following step is to allocate sufficient funds for the implementation of the plan, a step that is within the hands of the Ministry of Planning, which in most cases does not issue sufficient funding anyway, hence, negatively affecting the implementation of the plans as discussed later in this chapter.

5-3-2 Regional plan formulation: the economic dimension

As argued by an interviewed academic/professional, the Ministry of Planning is one of the powerful key actors in the process of regional planning; he argues that it is the only organization that does practical regional planning where it distributes the projects and investments on the six planning regions of Egypt.

Despite that there are regional bodies affiliated to the Ministry of Planning in each of the regions, mentioned earlier in the local administration system law, there is a remarkable lack of coordination between these bodies and the GOPP, and in most cases a total divorce between economic and spatial regional planning. According to another academic/professional, the only relation between the two types of planning is in the funds allocated by the Ministry of Planning for the implementation of the regional spatial plans.
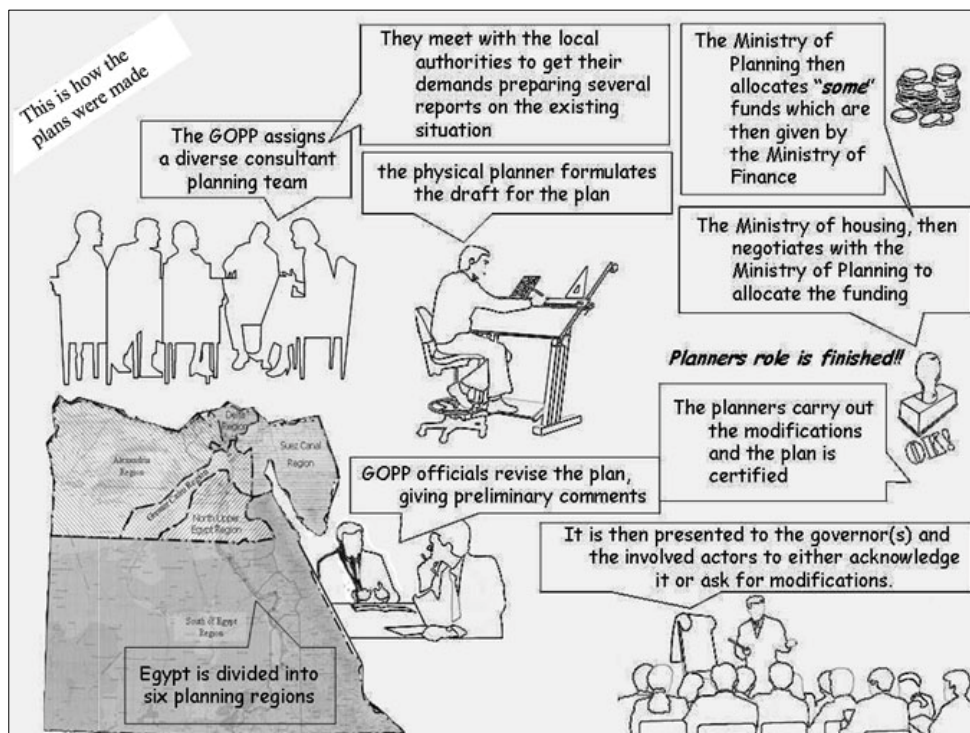
Fig.5-2: Regional planning process in Egypt (in counter clockwise)
Source: Adapted by the author

According to one of the interviewed professionals, the process itself of obtaining these funds takes place in the following manner:

a) After the Ministry of Housing (which the GOPP is part of it) acknowledges the regional spatial plans made by the consultants assigned by the GOPP, it negotiates with the Ministry of Planning to allocate the funding for their implementation.

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b) The next step is done by the Ministry of Finance that gives the sum of funding allocated/issued by the Ministry of Planning.

As stated by one of the interviewed professionals, it is important to note that not all funding comes from the central government i.e. ministries of planning and finance, but also from private investments especially when the plans deal with constructing new cities, as part of a regional plan. He gives the example of New Cairo City, the infrastructure and basic utilities were provided by the government, while the money allocated for land acquisition and so forth was provided by the organization for new communities (an organization affiliated to the Ministry of Housing and responsible for new cities) and the rest was provided by the private sector's investors.

However, in the majority of the cases the spatial regional development plans seldom achieve their full objectives and even in some cases never get implemented; the plans are considered as general frameworks and there are seldom any action-plans for their implementations. Generally speaking, there are no commitments to these plans, which do not have any binding power, which reflects the need of having clear physical projects and ensuring their implementation. These are considered among the obstacles within the regional planning process in Egypt and are discussed in a later section.

5-4 Actors involved in the planning process

It is important at this point to identify and analyze the different actors who were involved in the planning process, which was based until recently on a top-down approach.
Based on the outcome of the interviews, one can list the actors involved in the regional planning process as follows:

- GOPP / Ministry of Housing
- Ministry of Planning (mainly economic planning)   *Actors on the National level*
- The planners
- The governors
- Local people's councils
- Local executive committees   *Actors on the regional level*
- Private sector investors
- Citizens

The positions and powers of these actors varied in a remarkable way in their involvement in the regional planning process. They are described here in relation to the process that was prevailing in Egypt until the early 2000s and is recently being transformed.

5-4-1 Actors on the national level
There are three main important actors that are involved in the regional planning process, which directly represent the central government; these are the GOPP affiliated to the Ministry of Housing, the Ministry of Planning and the planners as they are appointed by the GOPP and work directly through it.

- GOPP/ Ministry of Housing
The General Organization for Physical Planning (GOPP) is the organization responsible for physical planning in Egypt.
The responsibilities of the GOPP include appointing the consultants for the different physical planning tasks & setting the terms of reference for each case, as mentioned by one of the interviewed consultants.

However, as mentioned by another interviewee, the GOPP does not have a legal executive power to implement these plans; it is considered a consultant office affiliated to the government and paid by the different provinces to make their plans. The provinces, in theory, have the choice to appoint other consultant offices for this task, however, any of these plans should get its *final approval from the GOPP*, which is the *actual power* of the organization.

In reality, the regional planning process has to proceed through the consultant planners appointed by the GOPP, making them (the GOPP and the planners) the actual actors involved in the process, from a technical point of view; however, there are definitely other actors involved in the planning process.

Sometimes the most important actor in the process would be the Minister of Housing himself; this was clear during the era of the former Minister (1993-2005). His role varied according to the region in question, the regions that would generate more benefits had his direct attention. This was clear in: the NWC for the possibility of investing in the so-called touristic resorts, Cairo for being the metropolitan capital region and Toshka since it had a political importance. In many cases, the instructions of the Minister superseded those of the planning team involved in the planning process.

Ministry of Planning

The role of the Ministry of Planning (the name changed recently to Ministry of Economic Development) has been discussed earlier; it is worth mentioning that it has the upper hand in allocating the necessary funds for the implementation of regional plans. However, as discussed by some of the interviewees, the funds that were issued by the ministry were usually not sufficient for realizing the plans, which was one of the reasons for crippling their full implementation, as discussed later in this chapter.

The physical planners

According to the majority of the interviewees, physical planners were technocrats, but with almost no powers at all. This view is be related to the fact that the model of planning that was used in Egypt was the rational comprehensive model.

The focus of this model, as argued by Sandercock (1998), is on the need for intervention by the state in markets and social process with a central aim of societal guidance. In this planning model, the central concern is with hierarchy and the laying out of alternative actions for the top powers, at the same time when planners are their handmaidens who know what to be done based on their knowledge and expertise.

However, the recent changes and shifts in the Egyptian political atmosphere had its reflections on the planning domain; therefore the opinions were split on the current position of the planner:

On one hand, some of the interviewed consultants insist that the role of planners in Egypt is just a technical one; hence, the physical planner is a technocrat whose role ends when the plan is submitted to the GOPP. Some of the interviewees argue that planners do not have any powers in defending their visions, which sometimes are rejected or not taken into consideration. This is because they seek long term development and outcome, while the authorities want an immediate outcome. The notion of power here is not the political power of decision making, as this is not the planners' role, planners already have the power of knowledge and creativity, what is meant here, is related to their visions within the central system. All what mattered was to comply with the terms of reference set by the GOPP, regardless, if they have a vision based on people's needs or not. In other words, they did not have enough space to mediate between the different actors and listen to their needs.

On the other hand, others believe that this situation is changing and the role of planners is turning into a facilitator and a mediator between different actors and stakeholders involved in the planning process, as discussed later in this chapter.

5-4-2 Actors on the regional level

On the regional level, the main actor groups involved in the regional planning process are: the governors of the different provinces within the targeted region, the local councils, the local executive committees, private sector investors and citizen groups.

The Governors

The governors of the different governorates (provinces) have vast powers attributed to them by law; they have the same powers as the ministers and a similar part to that of the president[73]. The use of this power, however, depends to a great extent on the personality and character of the governor. He is seen as a key actor in the planning process on different levels; in many cases the governor has the upper hand in decision making and taking.

Stemming from their practical experience on the local and provincial level, some interviewed consultants confirmed that the governor was the one who actually had the power to approve or reject the plans, marginalizing in this way the role of local councils and other actor groups.

The following quote from one of the interviewed consultants, describes best the role of the governor:

> *"…, the key person is the governor, if he is convinced the others will get convinced as well, and those who follow him will follow his logic. It's a top down system, if the head is convinced i.e. the governor, the others will be as well…."*

Previous incidents and cases proved this argument. In several Egyptian provinces, the governors personally intervened and took several initiatives and actions in favour of a specific development scheme. The former Governor of Alexandria, Mr. A. Mahgoob (1997-2006), is a good example, as he used his powers to form a cooperative scheme with local investors and businessmen who managed in few years to transform Alexandria from a city suffering from deterioration, into one of the most favourable cities in Egypt; because of his interventions he gained the support of almost all citizen groups in the city.

Local councils

The local councils, also known as Local Popular Councils (LPCs), are formed by direct elections to represent the citizens of the governorate (province). LPCs are formed on the different local and provincial levels of the administrative hierarchy, where the LPCs on top of the hierarchy supervise those on lower levels.

According to the Local Administration System law (1979), these councils are entitled to acknowledge and supervise the implementation of different development plans, including spatial plans. They are also entitled to approve and suggest projects for urban, social and economical development, while participating in setting the implementation budget and the proposition of local taxes.

Many of the interviewed consultants agree that these councils "theoretically" have the power to steer a decentralized decision making process, and to engage in the planning process from below. In reality, as argued by Sirry (2002), most of the LPCs' recommendations were typically assigned a lower priority and in many cases ignored, if they do not accord with the central government's policies.

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[73] This statement is based on the articles of the Local Administration system (1979)

In most cases, the intervention of these councils in the planning process is limited to expressing specific needs to the planners, but the final plan approval in most cases was determined by the governor.

However, according to many interviewees this situation is gradually changing to a solid participation by the LPCs, in line with the shifts that are happening within the system.

Local executive committees

The local executive committees, which represent the different hierarchical levels of the administrative system, are the representatives of the line ministries in the different provinces; they are supposed to carry out the plans and the projects certified by the LPCs, which also monitor them[74]. In reality, they follow the directions of the ministries and overstepping on the recommendations of the LPCs, which is not what they are supposed to do.

Nevertheless, they also participate in the planning process, especially in the plan-hearing sessions, but, as argued by an interviewed consultant, when it concerns regional planning, they are usually unaware of the level being addressed, and are confused about the type of projects they suggest or the type of problems they raise. However, their presence is useful as sometimes they raise technical issues that should be taken into consideration.

Private sector investors

The role of investors has been gaining importance in regional development since the 1980s, as discussed in the previous chapter. However, according to the interviewed consultants their involvement was marginal in the planning process itself. They would conduct their own studies according to their desired projects with no concrete coordination with the planning bodies and perhaps their projects might coincide with the regional development plans.

In many cases, they were invited by the government to invest within the targeted regions, after their plans had been already made, assuming that the investors might be interested in investing in projects proposed within the plan.

As explained by an interviewed consultant, the investors are invited to communicate with a special committee responsible for investment in these regions to have an overview on the so called regional investment map and the benefits of investment in these places[75].

In few cases however, investors and other interested actors were invited to participate in the planning process. An interviewed academic/consultant refers to the planning of the NWC, in which the planners decided to make an initiative by involving all interest groups; this was backed up by the government as well, since this region was regarded as a possible location for tourism industry, hence, interested investors and entrepreneurs were directly involved.

Recently, the situation is changing at least on the local level. A consultant and a GOPP official agree that currently investors participate effectively in the strategic planning processes that are taking place in some cities and villages in Egypt and are considered among the key stakeholders of that process.

Citizen groups

The participation of citizen groups is seen as important in local levels, but questionable in terms of provincial and regional levels, in terms of their perception and understanding of the level and outcome of the planning projects.

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[74] This is based on the articles of the local administration system law (1979).

[75] This map would contain the possible investment projects and opportunities in the region that are available for the investors, it is issued by the general organization for investment an organization that is affiliated with the ministry of planning.

An interviewed consultant argues that participation in the planning process should not be taken to the level of ordinary citizens when dealing with the regional level; instead, it should be kept within the regional government with the involvement of experts, be that universities, consultant offices, or research centers; the plan should be done after a concrete discussion within these groups. Several opinions support the involvement of different stakeholders in the development process, provided that these actors would have a good view and understanding of the regional dimension. As for direct citizen participation in regional planning, some of the interviewees argue that effective participation of LPCs on the provincial level would be sufficient, provided that preliminary explanation of the regional dimension is given first.

It is argued however, that citizen participation is important when it comes to setting local spatial plans and assigning development projects within the framework of the regional plan.

An interviewed official points that for each planning level, there is a set of actor groups who should be invited to participate in the planning process, and these groups differ.

The main actors discussed above are presented in relation to their powers in the following table and in figure 4-3.

Actor	*Position / Power*
GOPP	- Appoints the consultants for plan formulation - A consultant office of the government - Does not have an *executive power* - Monitoring the planning process and *the certification of the plans* are of its key functions.
Ministry of Planning	- Has the *upper hand* in approving the plan and *allocating the funds* for its implementation.
Governors	- Key actors in the planning process with strong powers. - The use of these powers and intervention depends on the personality of each governor.
Local councils	- Supposed to be a key actor in the process in terms of being both a monitoring body on the executive authorities and reflecting the needs and demands of the citizens to be considered in the planning process. - They were marginalized and seldom practiced their powers. - However, this is changing towards a more concrete participation in the planning process.
Local executive committees	- They are representatives for line ministries which they directly follow regardless of the demands of the LPCs. - They have a vague and unclear view on regional planning.
Private Sector Investors	- Have a strong role in development - Yet, they do not participate in the planning process, only after it has finished, they would move in their investments. - In many cases, their work is based on their own initiatives and not following the plan.
Citizens	- Almost no citizen participation on the regional scale. - Instead of direct citizen participation, local people's councils participate in the process.
Planners (Physical Planners)	- Used to be powerless technocrats, yet there is a slow but gradual shift towards a role of mediation for changes.

Table 4-1: Actors involved in the regional planning process
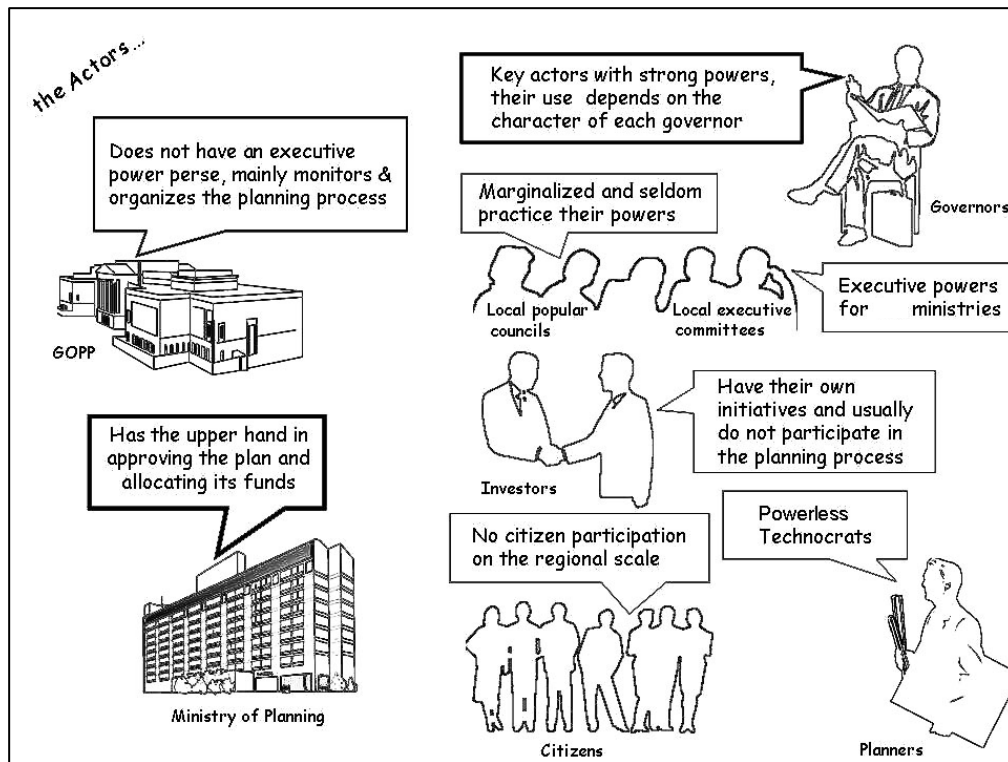
Fig. 4-3: Actor groups involved in the regional planning process
Source: Adapted by the author

It is clear from the above discussion that the balance of power of some actors namely those of the government superseded the remaining actor groups, leading to their marginalization from the planning process. There might have been groups of actors, but there has not been adequate "networking" between them, definitely not in the manner discussed in chapter three, hence a severe shortcoming in regards to the regional planning process.

5-5 Obstacles within the regional planning process

A typical question is raised when the regional development plans for the different Egyptian regions, like the New Valley, Sinai and the North West Coast, are discussed: "Why the implemented plans had not fulfilled all their objectives and why others were not implemented at all?"

In accordance with the statements made by the different interviewees, this section highlights the problems and obstacles facing the regional plan formulation and implementation; so as to answer and explain the above question.

5-5-1 Funding and budget

Several planners agreed that the allocation of funds for the plan implementation is usually insufficient. As shown earlier, it is the Ministry of Planning that allocates the funds, however, these funds are usually insufficient to fully implement the plans, and that is why they simply fail to achieve their objectives, even the GOPP officials agree on this point.

The problem with funding is that it is central, coming directly from the Ministry of Planning, at a time when the state can not fulfill all the objectives and targets for development on its own; explains an interviewed consultant.

Despite the involvement of the private sector in several development projects, the lack of its involvement in the plan making phase hinders its direct support in the plan implementation, the same situation is evident in the funds coming from international donor organizations e.g.

USAID, where these funds are channeled to specific projects meeting the criteria conditioned by these organizations and not in line with regional programs or plans.

A grim reality is presented by another consultant who states that this problem is not only confined to regional plans, but also to local and provincial plans as well. Usually after the master/structural plans are approved they are kept in the governorate, if it has the sufficient budget, a consultant office is assigned to make the detailed plan or the action plan for them, if not, then they are just kept there for years until they are outdated.

5-5-2 Perception and understanding

According to the interviewed consultants and officials, there is a stark misperception and misunderstanding in regards to regional planning. This is evident among the LPCs and the local executives committees; in which most of their members are unaware of the regional dimensions or the meaning of regional development plans.

However, this misperception is also evident among the three main groups that are involved directly and professionally in the regional planning process, these are; the officials, i.e. governors, some of the GOPP personals, and even some planners. This misperception differs from one group to the other as illustrated in the following table, based on the conducted interviews.

Group	Type of misperception
Officials (Governors)	Lack the culture of understanding long term objectives on the regional level; instead they expect to get short term actions leading to fast outcome in their own governorates (to ensure political gains) regardless of the regional dimension.
GOPP Personals	Some of the middle tier GOPP personals seriously think that regional plans are only a source of information; this is because the extensive preliminary studies of the existing situation in the region provide a comprehensive background on several aspects necessary for the plan making, thus they consider the plan as a source of data but the use of the plan itself for implementation does not exist, they just call it "desk work." As for the regional representatives of the GOPP, the staff in the regional offices are not well trained and do not have the awareness on regional planning.
Spatial Planners	In many cases, the planner is not aware of many policies or strategies that are done on the political / economical level; this lack of knowledge affects the comprehensiveness of the plan, as it lacks the political and economic dimensions and will not be reflected in the spatial impacts of the plan.

Table 4-2: The misperception of regional planning.

As a matter of fact, these types of misperception overlap with other problems. The misperception of the GOPP officials overlaps with the lack of trained staff, while the lack of knowledge among the planners results from the lack of coordination and total divorce between spatial and economic regional planning; these problems are discussed in the following sections.

5-5-3 Coordination

In terms of coordination between the involved actors in the planning process, the following remarkable drawbacks were raised by the interviewees:

- As shown earlier, there are supposed to be committees that would coordinate the projects and plans on the regional level with the participation of different governors whose governorates are involved in the region together with the representatives of LPCs and those from the different ministries; however, these committees seldom meet, and if they do, their decisions are not taken seriously.
- The lack of coordination between the Ministry of Planning and the GOPP results in complete separation between the economic planning and spatial planning.
- This lack of coordination exists also between other ministries that are involved in the development process. Basically each ministry has its own regional map of projects, and in many cases, some of the projects could be duplicated by two different ministries, this contradiction would put the country in a state of disorientation.
- Finally, in many cases the information available at one ministry was considered confidential and could not be exchanged with other bodies, which to a great extent is both a reason and an outcome for the lack of coordination; however, this situation is recently being changed as explained by an interviewed official.

5-5-4 Trained staff

The lack of trained staff affects directly the process of regional planning, this lack of training results in the misperception and lack of understanding regarding this type of planning. Not only that, it also affects the process of decentralization and localizing/regionalizing the planning process. Even though decentralization is stated in different laws, on the local and regional levels, it does not work, simply because of the lack of institutional support and trained staff. Usually most plans, on the regional or local levels, are done by consultants who are assigned by the GOPP in Cairo, despite the presence of regional branches for it as pointed by one of the interviewed consultants.

Until recently, regional development plans were made in the centre; now there is a call that each governorate (province) should have its map, which locates regional projects according to the needs of each governorate to help in distributing the investments. In many cases some of these governorates do not have the capacities or the capabilities to do such plans, thus they seek the help of consultant offices.

From the above discussion, it is evident that in spite of the tendency of moving towards decentralization and planning from the regions themselves, the lack of well trained staff hinders the execution of this approach. In many cases, the local officers of the local executive committees and the local departments, either lack sufficient training or they initially have a different background other than planning; eventually the plans were set from the center. There are indeed several propositions from the consultants to hold training sessions for regional planning to raise the awareness within the involved officials and professionals.

5-5-5 Binding power and ownership of the plans

The ill implementation of the regional plans could be related to their lack of binding power and lack of public ownership. Interviewed consultants and officials alike agree that the regional plan is not a law and does not have any power; they do not even have the status of a commitment or a regional agreement (pact) discussed in chapter three; that is why in many cases regional plans were not taken seriously or deviated from their initial objectives.

As for the public ownership of the plans, what is meant here is the commitment of the different actors to realize the plans and the projects related to them. This is due to the lack of effective public participation in the plan making process, a statement that is given by an interviewed top GOPP official. Although sometimes the governor's support for specific plans leads to their implementation, once he is retired or out of office, the progress in plan implementation stops if it does not gain the support of his successor, in many cases that meant starting from scratch, as argued by one of the consultants.

However, one of the consultants made an interesting point, that in some national projects, such as the Toshka project and EL Salam Canal, they went ahead exactly as planned because they got a high level political support from the president, to the extent that there are complaints from the public opinion that projects and interventions are not realized unless the president intervenes, which is a direct reflection of the central system of the country.

Among the aspects that were not dealt with, is the quality of the plans and work of the consultants. It is difficult actually to asses such quality, simply because most of the interviewed consultants had participated in the making of some of these plans, they mostly did not comment on the quality of the plans, instead they critically commented on the dynamics and the logic of the plans. It should be mentioned that in the 1970s and 1980s many of the regional plans were made in cooperation with international planning firms from Europe and the United States, with the clear example for this cooperation is the regional plan for Cairo (1982-1983), which was done in cooperation with the IAURIF of France with a continuous follow up until the 1990s. However, because of the limitations of the study, an exact assessment of the quality of the planning work could not be carried out.

5-5-6 Top down effects

Based on earlier discussions, it is obvious that planning until recent in Egypt was done in a top-down approach. In addition, the marginalization of the different actor groups other than those of the government led to other problems, e.g. the lack of ownership of regional plans.

However, as argued by an interviewed consultant, there are other top-down aspects that appear not on regular bases and lead to the improper implementation of regional plans, he refers to state exaggeration, and occasional authoritarian decisions are two of these effects; these are highlighted briefly as follows.

State Exaggeration
This is considered one of the tangible characteristics of some of the development projects that are carried out in Egypt. The state would always announce large figures when talking about progress; if the actual possibility, for example, is to reclaim 100 hectares the state would announce the reclamation of a 1000 hectares in order to make the figure impressive, eventually the announced development plan would not be successful because it is out of scope; this is a common element in many developing countries, as their governments tend to exaggerate in figures seeking good publicity for its progress, even if the potentials and resources for doing so are insufficient. This is quite common in Egypt, especially when land reclamation projects are initiated in the desert, the announced numbers of hectares to be developed within a specific time frame, are in many cases exaggerated.

Authoritarian Decisions
Some times, after the planners and experts had made the plans according to the available information, studies and analysis; the state would issue a political decision that conflicts with the facts upon which the plan is based. The effects of such decisions are indeed devastating in terms of the outcome of their implementation and the morals of those who worked on the

initial plan, in many cases these decisions are sudden and only based on the political will not on any studies which cause regrettable effects in the future.

The spatial and regional planning process discussed in the previous sections was in fact prevailing until early 2003, since then there has been a gradual shift and transformations in the Egyptian planning system.

Based on the above discussion it is argued that the introduction of networking and the setting up of actor networks within that system would have never succeeded, simply because most of the success factors for networking and creating actor networks, discussed in chapter three, did not exist within this system. To mention a few, there was a continuous exclusion of the directly related actors, lack of trust between different bodies and actors, the lack of regional pacts or agreements which was reflected in the above discussion as lack of public ownership of the plan, and the lack of professional capacities to conduct a proper management. However, there are drastic transformations taking place in the system, which might allow for the introduction of networking.

5-6 The "changing" Egyptian planning system

According to many interviewees, the Egyptian planning system took a different turn in recent years. Public and citizen participation in the planning process gradually increased and is becoming a tangible part of the process, while the role of planners changed from being only technocrats to becoming also facilitators and mediators for development among the different actor groups related to the planning process. Such groups are now invited to participate in plan making, while endorsing strategic planning, this was seldom considered before 2000.

This change is very important, as it directly affects, the future attempts for regional development and planning, including the application of networking and networks as tools for regional development since it fulfils some of the missing success factors discussed earlier.

When asked about the reasons for this transformation, an interviewed official argued that the transformation was necessary to adjust with the international settings and the impacts of globalization and free market, which the existing planning system could not deal with.

Other interviewees including another official agreed that this transformation was a direct outcome of the pressure laid by the international development agencies, in the manner discussed in chapter two, to support development from below and stress on endogenous development. However, an interviewed consultant argue that there had been efforts by the planners themselves to change the existing top down system, by proposing bottom up approaches in specific planning projects that were generalized later on.

5-6-1 Transformation benchmarks of the planning system

One can argue that this transformation might have happened due to a combination of all arguments discussed above. There have been some recent clear benchmarks towards this transformation that took place as early as 2003; the three main of these are reviewed briefly as follows.

1- Implementation mechanisms project

This project was held in 2003; basically a research and an investigation to understand why the New Cities constructed in the South of Egypt (at least many of them) failed to achieve their planned objectives, mainly in attracting population.

The project was initiated by the GOPP in cooperation with the UNDP, in which consultants were asked to investigate the reasons for the poor implementation and outcome of the plans. According to Prof. El Wakil who was one of the main consultants involved in the program, the planning team decided to start with the local level by involving the cities' officials, the targeted population and those who already settled in the cities.

The outcome of the research proved that there is a total separation between the cities' officials who were satisfied with their work and thought that selling land parcels is a clear evidence on their success in developing a city, which is a narrow point of view, and the targeted/ settled population who argued that there is basically no development management and no proper services to encourage people to move to these cities. The planning team could not have realized these facts without involving these three categories. It is interesting to know that initially the GOPP expected the team to carry out this investigation based only on the information provided by the upper levels, the idea of involving local population and officials was suggested by the planners, which in fact reflects the common sense in these situations[76].

2- Planning the Egyptian villages

In 2001- 2002 a national project was initiated by the GOPP which aimed to upgrade and plan the Egyptian villages, which was called "The guidance plan for upgrading Egyptian villages".
 The planning work that was carried out at that time, followed the same planning process, discussed earlier in this chapter, the planners were basically technocrats and the population groups were totally marginalized, being consulted sometimes and informed with the outcome of the planning at the end[77].

However, in 2003 there was a major turn in the project; when it was renamed: "General strategic plan for upgrading Egyptian villages".

Almost all the interviewed consultants agreed that the used planning approach was set to ensure a bottom up approach of development, there was a strong emphasis on citizen participation and the involvement of all actors in the planning process. This started a lot of negotiations and trade offs among the different actor groups, while the planners took the role of mediators and facilitators between them; the plans for 1600 villages have been formulated until now and the project is still ongoing.

3- Strategic urban plans for small cities program

Following the tracks of the above project, a new program that was announced at the end of 2006 seeks to make strategic urban plans for small cities in Egypt.

The GOPP decided to cooperate with the UNHABITAT in conducting part of this program, which is targeting 130 medium sized cities in total, many of them lack a vision for urban management.

According to the requirements set by these two bodies in (2006), which the consultants have to follow, they are asked in collaboration with related local actor groups to make a strategic plan for a city to face and coop with the national and regional changing settings. This is done by studying and analyzing the current situation and identifying the problems and challenges, allowing them to draw a vision for the future of the city to finally make the strategic plan and identify priority projects (see annex three for a further explanation on the mechanism of strategic plan making in Egypt).

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[76] This case is based on a discussion with Prof. El Wakil, one of the consultants and the planning team leader in this project.
[77] The discussion is based on the personal involvement at the last few months of this project between November 2002 and January 2003.

According to UNHABITAT (2006), the program adopts a decentralized and integrated approach to address three main substantive areas: shelter, basic urban services and local economic development; while environment, governance and vulnerability are additional cross cutting areas that will continue to inform the process. Through a participatory process involving local stakeholders, the objective is to prepare strategic urban plans with priority actions to improve housing conditions, urban services and local economy, which guides the city development for the next two decades.

The program already started through the GOPP which assigned the planning tasks to local planning firms and planning units affiliated to the different universities in Egypt. To avoid confusion at this point, it is important to remind that the regional planning offices affiliated to the GOPP are the ones lacking trained cadres. That is why the GOPP assigns the planning tasks to consultant offices that have their own trained staff, mostly from Cairo, which then get involved locally with the citizen groups and stockholders in these cities.

As illustrated by an interviewed consultant who is taking part in this program, a similar planning approach that is being applied to the villages, discussed above, is used in this program, taking into consideration the difference in levels and the expected outcome.

What is interesting is that the GOPP is regarded by the UNHABITAT as an organization, which has taken a strategic turn to transform itself into a regulatory body and decentralize the planning process in Egypt, thus giving a positive sign on the transformation process.

5-6-2 Decentralization within a hierarchical system

The system has not been fully transformed yet, in other words what is mentioned above is rather the beginning of the transformation, with many features of the central system starting to change in a slow pace.

However for the existing hierarchical structure within a transforming central system, special mechanisms are formulated to achieve decentralization within such settings. A good example is the mechanism used by the UNDP in a recent program in Egypt. This is reviewed in the following section as an experience to learn from and to use some of its aspects in the proposal for introducing networking in regional development and planning, which is discussed in part three of this thesis.

The MISR program

The UNDP is currently involved in an ongoing program called "Municipal Initiatives for Strategic Recovery" also known as the MISR[78] program.

The main aim of this project, as described by the UNDP (2006) is to support greater access to basic goods and services by local populations in the poorest areas of the country and a better match of development initiatives to the priority needs as expressed by the community members themselves. This outcome will be achieved by improving service delivery at the local level through decentralized participatory planning as well as transparent and accountable financial management, hence, the program is piloting decentralization by developing the capacity of local level administration and locally-elected officials to plan and manage the development process – making decisions at the local level without having to continuously revert to a central approval process[79].

What is interesting in this program is that it works within existing mechanisms and modifies them only if necessary. It is also defining a decentralized financial system for the funding of these initiatives together with income generating projects, obviously to alleviate the lack of capability in raising local funds, which was one of the major problems when it comes to

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[78] MISR also means Egypt in Arabic language.
[79] http://www.undp.org.eg/programme/gov/MISR.htm , February 2007.

implementation as discussed earlier. However, until the decentralized financial system is set in order, the UNDP is adopting an approach to coop with the current central system, yet, steering development projects in a decentralized way.

This approach was obvious in the initiatives carried out by the program in December 2006, in which stetting the provincial development plans for all the 26 governorates (provinces) of Egypt were commenced.

This process witnessed two combined approaches, the first being the preparation of these plans in a bottom up approach through decentralization and public participation, while the second was the funding of these plans in a hierarchical way through the existing institutions. These are explained briefly as follows[80].

Setting the plans

Working in a bottom up approach was the main theme in outlining the plans for these provinces, in the sense that the needs, demands and the projects of priorities were put forward, by means of public participation, starting from the level of the villages and taking these demands up through all the administrative levels until the level of the governorate (province). Eventually the prioritizing of projects was made according to the urgencies expressed by the public. In this case, instead of receiving the plans already made from the center, now local governments can finally propose their own agendas knowing that they will be considered and fulfilled.

Having identified these projects provincial officials would then cooperate with spatial planners and socio-economic consultants to formulate the plans for the different provinces. However, during this phase and because of the novelty of the bottom up approach and the shift to a decentralized system, some of these officials were confused about the role that they are supposed to play. This is because some of them still considered the traditional way of showing what the governor of the province wants and not the public interest, which reflected the need for holding some training sessions for the provincial officials to understand the new system. Luckily, this was not the case in all provinces, as many involved officials understood that the essence of this program is based on building partnerships between all the involved stakeholders including the different citizen groups.

The next step, could be considered as a compromise to the central system, where these plans are introduced to the related ministries (ministry of local development and the ministry of economic development) in which they get approved, mostly without modifications, though sometimes there was a rephrasing of these plans to serve some political agendas i.e. to show that these plans are fulfilling a certain electoral agenda, yet, without changing their essence.

Funding the projects

The way the funding is diffused to implement the projects suggested in the plans moves through the existing hierarchical settings of the system.

The UNDP gives the funding to the relevant ministries which would then diffuse it downwards, to the executive bodies of the governorates that would invest it in implementing the projects set in the plans[81]. Of course this does not mean that there are no private investments by some actors who might directly get involved in some development projects according to their interests.

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[80] The Mechanisms described here are based on the personal experience gained through the involvement of this phase of the project in December 2006 in Egypt and the documents related to the MISR program.
[81] The flow of the funding diffusion explained illustrated here, is roughly simplified

In such a way, the process combines the bottom up approach in which development plans are made with the UNDP as the main steering agent, and a center down hierarchical approach in which funding is given to the representatives of the central government, the related ministries, which would then diffuse these funds down the hierarchy.

It is seen that the approach used by the UNDP tries to give competencies to the lower levels of the system and ensures the involvement of all related actors, in a sense similar to the principle of subsidiarity, while funding their decisions in a hierarchical way.

Fig.4-4: Bottom-Up planning combined with a hierarchical diffusion of funds
Source: Adapted by the author

This approach exists already in developed countries specially those of federal system with the European Union as a clear example, where the principle of subsidiarity is an important element in the European law and consequently the ESDP[82].

This mechanism, applied by the UNDP, is considered successful, at least for the current phase of plan formulation and obtaining the funds, in realizing decentralization yet cooping with the existing system until the shift to full decentralization is done. Stressing on the role of partnerships was also a step forward, together with defining concrete projects that leads to the physical implementation of the plans. What is missing though is the role of actor networks, perhaps this will be identified as the program continues in its future phases.

5-7 Another possible combination

Through the discussions and analysis held in this chapter it was possible to understand the reasons for the failure of the previous regional plans in achieving some or all of their objectives. Based on the confrontation between the actual regional planning process and regional planning as regulated by legal documents, it is clear that there is a little link between the two. Especially that the official urban planning law does not elaborate on regional planning or its physical dimension, while a strong emphasis on regional planning from an economic point of view is evident in the local administration system law.

From the analysis of the actual planning procedure and the actors related to the process, it is concluded that the main reasons for the (partial) failure of the previous regional development plans are:

- From the legislative perspective, the settings are well defined to ensure a proper decentralized process of planning and decision making that would involve several related bodies and different levels of the government, at least when it concerns regional economic planning. However, these legislations are not respected and not fully applied, with a complete separation between spatial and economic planning.
- The exclusion of important actor groups from the planning process in most of the cases, hence, not knowing what are their demands.
- This led to a lack of commitment to these plans from the different actors that were marginalized in the process, while the plans themselves lacked legal binding powers unlike urban plans for example.

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[82] http://europa.eu/scadplus/glossary/subsidiarity_en.htm , February 2007.

- On top of that, insufficient funding always hindered the full implementation of the plans.
- Finally these were coupled with other aspects such as the lack of trained cadres in the different regions, eventually leading to the formulation of all the plans in Cairo. Also the lack of coordination between the different bodies involved in regional development and the misperception of regional plans by many officials who disregard their importance.

Recently, there was a shift in the planning process through which some of the obstacles discussed earlier were overcome. Mainly through shifting to a bottom up approach in plan making which ensured full public participation and inclusion of all actors. This eventually leads to commitment to the plans, and the coordination between the different consultants in regards to economic, social and spatial dimensions when setting the plans.

As a matter of fact, this shift is argued to be considered as a tool for democratization, since it supposed to empower the different segments of the civil society, and involves them in a democratic process through their positive participation in the planning process. This could even be considered training for such practice, since people start to know their rights and the use of them to induce change in the society. In being realistic however, it is questioned if this process of transformation will continue in the future in such a way to empower the different actor groups, or will it fade along the way? From early signs, the answer can be yes, nevertheless, only time can show the real outcome.

This shift also led to a change in the role of planners, simply from only a skilled technocrate, into a mediator between the different actors involved in the planning process, helping them in reaching an appropriate future vision of development, hence, using their knowledge and skills in the right direction.

It seems that should this transformation continues the aspects of governance, empowerment, collaboration of actor groups and the focus on the process of visioning and setting strategic plans would be further accentuated. These aspects are some of the elements forming the concepts of new regionalism discussed in chapter two, which suggests that a slow shift towards these concepts is taking place.

However, it is also concluded that for a traditional central system to be transformed, the process takes time, therefore different mechanisms are developed to ensure bottom up approach of planning, which is itself based on decentralization, through the hierarchal structure of the system. This was clear in the case of the MISR program where the bottom up approach took place in which development plans and projects were identified through full actor participation, this was combined by a center down diffusion of funds through the hierarchical system to realize these plans and projects.

It is also concluded that should this recent shift in the system continue, important success factors for networking and networks (discussed in chapter three) that are currently absent will be fulfilled, such as the inclusion of all related actors, building trust between the people and their local governments in such a way to substitute government by governance and establishing partnerships among other elements. This assumption can be the starting point in proposing the application of networking and networks in regional development in the Egyptian context. At the same time with the lessons learned from the MISR program , it is argued that since it was possible to combine a bottom up approach in setting the regional plans with a hierarchical center down diffusion of funds from the central government while involving the local and provincial governments in the process, it is therefore possible to combine networking with a hierarchical system to achieve regional development. This is discussed in detail through the settings of the case study in the next part in chapter nine.

Part Three

The Case Study

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VI- Regional Development Interventions in the Western Part of Egypt: a critical evaluation

6-1 Introduction

The case study region had passed through four decades of successive attempts for regional development; each was formulated through a regional development plan and set for implementation with several objectives, some were realized, while others were not.

Before analyzing the study region and studying the different potentials for conducting regional development through networking and the creation of networks, it is important to review the previous regional development interventions, in order to understand the reasons and factors for their successes and failures. These are taken into consideration when investigating the possibilities for networking in the region between the related actors aiming to the creation of different kinds of networks, hence, strengthening the capacity of the region.

This chapter supports the study done in chapter eight that investigates proper assets and opportunities to be used in the development proposal of the region that is based on regional networking; in the sense that the previous interventions that took place there were based on specific potentials, which led to the adoption of certain activities, therefore, these are identified in this chapter and are further discussed in chapter eight.

The chapter also analyzes the development attempts that took place in the Frafra group of settlements, which is considered a sub region of the case study region. This example is considered a case from the field, which illustrates the impact of two regional development plans with different intervention approaches on this group of settlements; it also illustrates a stark example of informal development and co-production.

It is important to state that the analysis done in this chapter is not biased against the top-down approach of development; as will be seen from the discussion. The study highlights both the successes and failures of development attempts, and acknowledging that if it were not for these interventions in the 1960s with their construction of infrastructures, road networks and even settlements, all the following interventions including the informal development attempts that recently took place would have been difficult if not impossible

This chapter is strongly related to chapters two, four and five; chapter two in the sense that it facilitates the comprehension of the regional development approaches used in the case study region, where chapter four gives a better understanding for the national regional development attempts and the prevailing political and economical settings, within which the attempts discussed in this chapter could be situated. And finally chapter five gives a better understanding for the reasons of the partial failure of the regional development plans discussed in this chapter, since their reasons are common within most of the Egyptian plans.

Several methods were used in order to conduct this part of the study; these included: the analytical study of official documents and literature related to the plans, interviewing some academics and GOPP officials about these previous attempts, as part of the field visit provincial and local officials were interviewed together with segments of the migrant population to the region especially in Frafra and Bahareya and finally critical observations from the field trips.

6-2 Background settings

In order to understand the regional development attempts that took place in this region, it is important to give a brief background on some of its characteristics, namely its location, population, its administrative settings and its history.

Another important characteristic of the region is its settlements' typology; however, these are discussed in chapter eight which deals with the common aspects and regional relationships between the region's settlements.

6-2-1 Location and population

As mentioned in chapter one, the case study area consists of five groups of settlements; Bahareya, Frafra, Kharga, Dakhla and Baris. These are located to the West of the Nile Valley (mainly in the South-West of Egypt) in the so called Western Desert of Egypt.

The inter distances among the cities within these groups of settlements together with distances between them and key cities in the Nile valley, according to existing roads, are shown in fig. (6-1), (see annex 6 for maps showing the distances between the settlements of each group).

This area is inhabited by a population of approximately 240000 inhabitants distributed over the five groups of settlements. The break-down of this population and its distribution over the settlements is illustrated in table 6-1.

In comparison to other Egyptian settlements along the Nile Valley, these settlements are considered under populated, and the region in itself is peripheral as discussed in chapter one[84].

Settlements' Group	Dakhla	Kharga	Bahareya	Frafra	Baris
Population	93500	72657	40000	21400	10806

Table 6-1: Population distribution in the study region (2006 est.)
Source: compiled from the year books of the five groups of settlements

6-2-2 Administrative settings and planning regions

In terms of *administrative settings*, these settlements belong to two governorates (provinces), a situation that is considered controversial. As shown figure (6-1), the four groups in the south belong to the "*New Valley governorate*[85] known in Egyptian Arabic as *El Wadi El Gedid* " with its capital city of Kharga. The governorate is divided into four counties which in Egypt are called Marakaz, literally meaning centers.

These counties or centers are:

- El Kharga center with its capital being El Kharga city
- El Dakhla center with its capital being Mut city
- EL Frafra center with its capital being El Frafra city
- Baris center with its capital being the city of Baris.

The New Valley governorate has international borders with Libya to the west and with Sudan to the South; it also has provincial borders with Giza and Marsa-Matrouh governorates to the North and with the Nile valley governorates of Menia, Asuit, Aswan and Quena to the East (Saadawy, 2004). This governorate belongs to the South of Egypt planning region (see figure 5-1 for the planning regions in Egypt).

The only group that does not belong to the New Valley governorate is Bahareya, which belongs to Giza Governorate that belongs to the Greater Cairo planning region.

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[84] The Full break down of the population of each group of settlements is illustrated in appendix 1.

[85] In Egypt the official name for a province is a governorate (in Arabic Mohafza) .
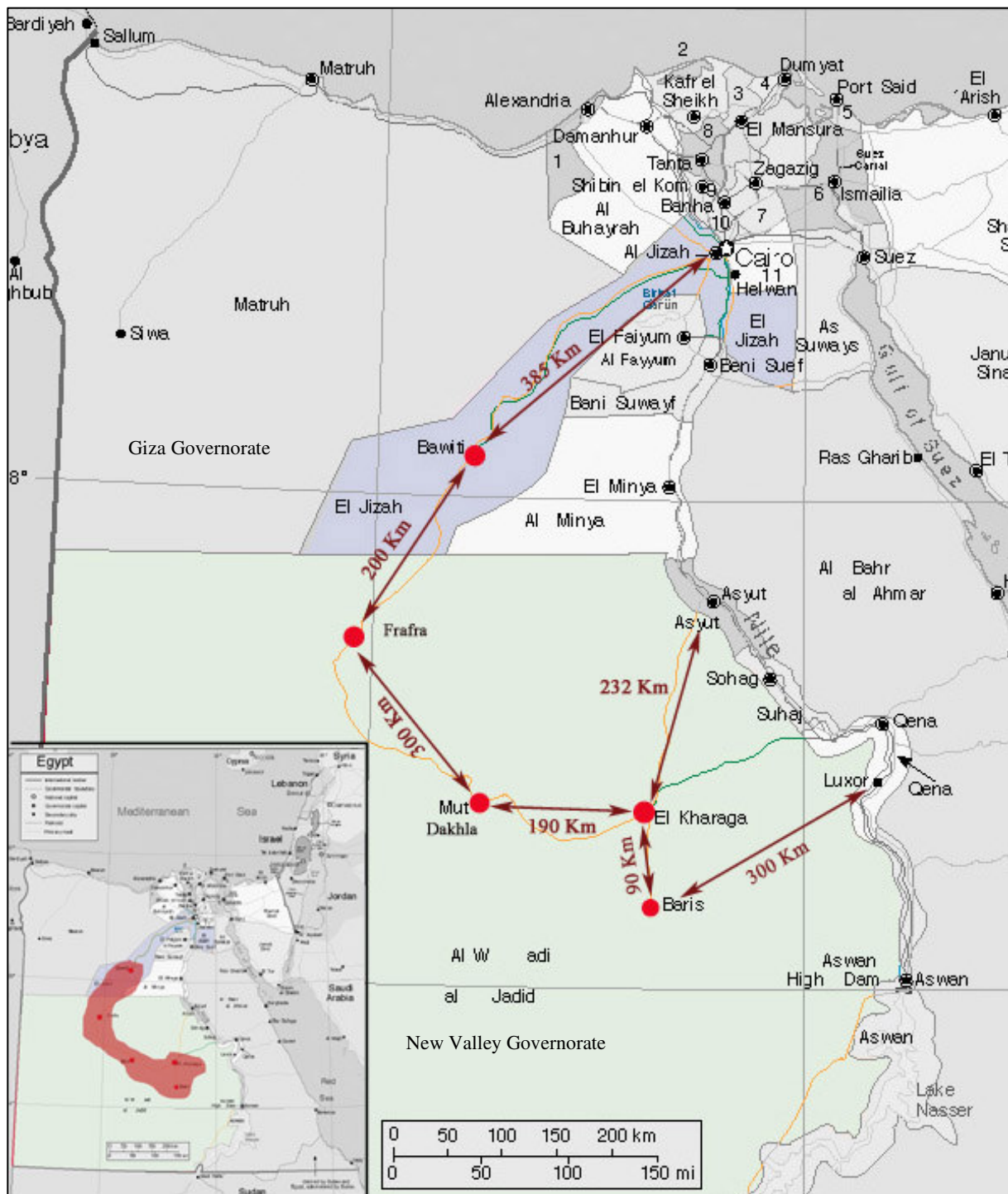
Fig. 6-1: Location of the 5 groups of settlements in the Western desert and their in-between distances

Source: Adapted by the author

This is considered a strange setting because the distance between the city of Bawiti, the capital of this group, and Giza is about 385 Km, while Bahareya is located in the Western Desert closer to the other oases. These settings have several impacts on the development process, mainly:

- Since the Bahareya belongs to a different governorate, the prospects for coordination and cooperation between the groups of settlements might be hindered by bureaucracy and different development agendas of the New Valley governorate and those of Giza Governorate.
- The polarization effects, discussed in chapter two, clearly outcome the trickle down and spread effects expected to come from the Greater Cairo Region, not only because

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most of the investments in the region go to Cairo, but also because of the large distance that puts Bahareya on the far periphery of the region, thus receiving minimum development investments.

These impacts are further discussed in chapter nine, when discussing a possible proposal for regional development based on networking.

As for each group of settlements, it is structure is based on having a capital city (called the center or Markaz) and groups of villages; each group is called a local unit and is named according to the name of the village that is the seat of local administration for the group. The settlements typology according to this categorization is further elaborated in chapter eight.

Settlements' Group	Dakhla	Kharga	Bahareya	Frafra	Baris
Cities	Mut	Kharga	Bawiti & Mines City	Frafra	Baris
Number of Local Units	15	8	3	3	4

Table 6-2: Administrative structure of the settlements' groups

6-2-3 Historical background

The settlements of the study region existed since the Pharaonic era; this section is bound to give a brief historical review starting from that era until present..

The Oases

Initially the settlements in that region were known –and are still known - as oases. These oases as mentioned by Saadawy (2004) were known since ancient times for being the main gate to Egypt from the west and south, especially that it had the ancient Forty days trade route (Darb El Arbeen), which linked Egypt with sub Saharan Africa, passing through them. This was given as a historical example on networks and networking in chapter three.

Fig.6-2: Several ancient trade routes through Eastern Mediterranean and the Middle East passed through the oases

The Pharonic era

At that time the oases were exchanging hands between the Egyptians and the Libyans until they were permanently annexed to Egypt circa (2000-1925 BC) to become the first line of defense of Egypt

Fig.6-3. Hibis Pharonic temple in Kharga oasis

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from the west, thus considered as one of its most important regions.

It is also worth mentioning that the oases were divided into two groups, the Northern group consisted of Siwa and Bahareya and the Southern group which included, Frafra, Dakhla, Kharga and Baris. The traces of this period are still visible in the form of temples, check points and ancient ruins in the area.

The Ptolemaic/ Roman eras

In these eras, the prosperity of the region continued especially in agriculture. At that time the region had sufficient water resources, in addition to the attention of the Romans to drilling irrigation wells, according to GOPP (1996), the population of the oases reached one million inhabitants in that era, which is considered a large number if compared with the current population of the region. Like the Pharos the rulers of these eras left traces of their achievements in the region with many "Roman" wells and ruins (Figure: 6-4)

The Early Christian era

The region was then transformed into the hideout for early Christians, in the 3rd and 4th centuries who escaped the tyranny of the Romans (Saadawy, 2004). They managed to live in peace and harmony in the oases especially in the area that is now known as El Kharga, where the traces of this era are still visible in the Bagawat (figure: 6-5).

Fig.6-4: Roman fortress ruins near el Haiz in Bahareya oasis

Fig.6-5: The Bagawat ruins of early Christian era in Kharga city

The Islamic era

However, after the Arab conquest of Egypt and the beginning of the Islamic era, the situation in the oases started to deteriorate since the Arabs came from the desert in the Arabian Peninsula, eventually they preferred to settle down in the green lands of the Nile Valley close to the river.

Accordingly, the oases became vulnerable to external assaults and control by the Berbers which led many of its inhabitants to flee causing a drastic decrease in its inhabitants (GOPP, 1996).

The oases had a new role at that period as they became posts on the pilgrimage route for the convoys from the Magreb to Mecca through the desert.

Fig.6-6: 6th century Islamic village of El Quasr in Dakhla

Despite the preference of the majority of the Arabs to settle by the Nile valley, some continued to migrate and settle in the oases and in some cases even building settlements there, for example the town of el Quasr in Dakhla which dates back to the 6th century (El Seesy et al, 2002).

The Ottoman rule

During that period, development started to take place again in that region with a relative increase in the number of inhabitants and an improvement in the socio-economic situation, especially in the settlements situated on the trade routes, it is also important to mention that several villages were constructed at that time.

In modern times

The Southern oases (Frafra, Dakhla, Kharga and Baris) together with Asuit in the Nile Valley became one province starting from 1857. The activities of the oases were mainly agriculture and trade, however the latter suffered a harsh decline with the stopping of trade through the forty days route (Darb El Arbeen) which eventually affected the socio-economic levels in the region, yet, there was an increase in the cultivated lands at that time due to the expansion in well drilling (GOPP, 1996). In the early 20th century, land reclamation started in the Southern Oases which were linked (starting from EL Kharga) to the Nile Valley by a mediocre railway.

By 1916 and during the First World War, two "military" governorates were formed in the Western desert to protect and maintain the Egyptian borders[87], one in the North and the other in the South that was called the Southern Desert Governorate, where the southern oases were separated from Asuit until the government formed the New Valley Governorate in 1959, based on the initiative to establish a new valley parallel to the Nile valley, mainly, through reclaiming the desert land and cultivating it using under ground water (GOPP, 1996).

Starting from this point the region witnessed several regional development interventions, which continue until present, these are discussed through the rest of this chapter.

6-3 Regional development interventions

The development interventions in the study region has been going on since 1959, as part of the regional development attempts that took place in Egypt through the following four decades as discussed in chapter four. These interventions were state-led initiatives in a traditional top-down approach, which as discussed earlier had a strong role in the development of this region. In most cases the spatial regional development approach was based on the strategy of establishing small service centres associated with rural development, while the whole establishment of the New Valley Governorate reflects the strategy of establishing a new province to be developed; these strategies were discussed in chapter two.

It is important to review these attempts and analyze the aspects of success and failure in each of them, not only to avoid falling for similar drawbacks in future proposed strategies of this region but also to learn from the success factors and invest them in these strategies.

6-3-1 Regional development interventions in the 1960s

The call for development in that area started as early as 1959 and gained momentum in the following two years; during the 1960s these development attempts reached their peak which was considered one of the top priorities of the government's agenda until the whole process stopped because of the six days war in 1967.

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[87] Egypt was under British Occupation since 1882, during WWI, Egypt was considered as a British protectorate, it later gained partial independence in 1922, yet, British troops remained in Egypt through WWII until they eventually withdrawn in 1956.

Background

As discussed in chapter four, since the 1960s, government officials were concerned of the fact that the population of Egypt reached 46 millions, which to them at that time was alarming, as the population had more than doubled in comparison to only 19 millions in 1947. Thus, the government looked towards the desert for possibilities of expansion which was the main reason for the forthcoming development attempts.

Yet, there was another social dimension for these attempts at that time, where the concept of expansion in the desert was backed by the government and president Nasser himself, who adopted socialism as the ideology of the country at that time.

Owing to the ideology of the 1952 revolution that was headed by Nasser, one of its main aims was to eradicate feudalism from Egypt, and enhance the living standards of millions of farmers. Accordingly, Nasser thrived to make achievements on the ground; therefore he was looking to the expansion on the desert as a way to transform thousands of poor farmers in the Nile valley into land owners in the New Valley[88].

Fig 6-7: A publicity book that was funded by the government in 1962; the Arabic script means: New horizons of life in the New Valley

These attempts came at the time where the Egyptian economy was flourishing as a result of the first five years development plan, discussed in chapter four, in which the approach of the government towards regional development was of spreading the investments on different regions. One of them was the study region, which was considered a large scale intervention in the 1960s.

An institutional governmental body was formed in 1959 as part of the Ministry of Agriculture; the main activity of this body was to carry out the development and expansion attempts in the Egyptian deserts, which included: the New Valley, the North West Coast, Sinai and some other regions. Its most famous intervention was the New Valley; this institution was called the General Egyptian Institution for Desert Development (GEIDD).

The Development attempt

According to Fraag (1963) the project aimed to develop the desert areas through land reclamation for agricultural purposes, the aim was to relocate a population of about 4 million inhabitants from the Nile Valley to the New Valley that would settle down in new human settlements. This was considered an ambitious objective in terms of the large number of people to be relocated, and it reflects both the ambitious of the new Egyptian government at that time to achieve development, and also its exaggeration, as discussed in chapter five, in terms of the announced figures.

However, one of the main issues at that time, and remains important until now, was the availability of water, which in the early 1960s was claimed not to be of a major concern due to evidence that the region lays over a large underground water reservoir (GEIDD, 1962), hence the project proceeded, specially with the strong flow of water from the recently drilled wells at that time[89].

Consequently, five year plans for the development of the region were made seeking to achieve the above mentioned objectives.
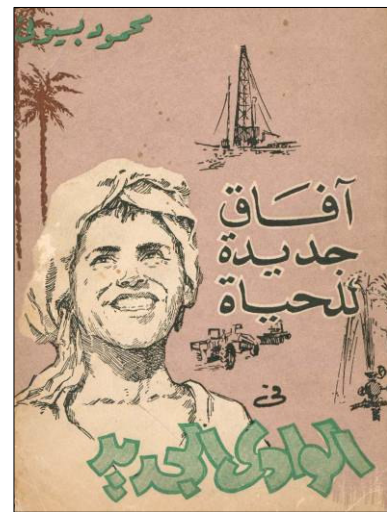
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[88]Based on extracts from the GEIDD, The projects for expansion in the desert and what is done in the first 10 years after the revolution, 1962, Cairo.
[89] Mahdy (1979) points out the water wells at that time were drilled using the same drillers for oil.

In principle, the elements of the project were as follows:

- For each specific area of reclaimed land a new village was to be constructed to host the migrants (the new land owners) from the Nile valley, where these villages were to come under the administration of trained agronomists who would supervise and direct land reclamation and cultivation efforts.
- These villages and new settlements were to be supplied with necessary services and infrastructure, at the same time, sufficient road networks were to be constructed to ensure accessibility.
- Socio-economic developments were to take place among the existing and incoming population to raise the social and economic standards at these areas.
- In addition, other supporting activities such as agro-industries and cattle breeding were to be conducted as additional means to support the economic progress.

According to Basyouni (1962) the first phase of the project i.e. the first five years plan starting from 1960 aimed to reclaim 96000 Feddans[90], spread over the areas between Frafra and Bahareya on one hand and Kharga and Dakhla on the other. About 25 villages and 48 villages were supposed to be constructed in these areas respectively to host 4500 migrant families (figure 6-8).

However, there was initially an experimental project between Kharga and Dakhla aiming to reclaim an area of 21000 Feddans, were the roads crossing the two settlements (at that time still villages) were paved and villages were supposed to be constructed 20 Km apart from each other along these roads, hence, each would cover the area of about 1500 Feddans, where each family was to own 5-10 Feddans (GEIDD, 1962).

Finally at that time, plans for expansion in mining activities especially on iron ore in Bahareya were already underway; aiming to start production in 1966, the mine was to be constructed by a Swedish company and to be complemented by constructing a settlement for its workers. The complex was to be supported by a railway to transfer the iron ore to factories in the Nile valley.

Fig 6-8: The area of intervention in the New Valley in the 1960s
Source: GEIDD (1962)

The concept of developing the New Valley reflects a clear example of a development axis strategy, discussed in chapter two, since the main aim was to strengthen a parallel spine of development to the Nile Valley, which actually remains the main objectives until present.

Project outcomes: a critical overview

In order to discuss the outcomes of this project, the status of this region before the 1960s' intervention should be made clear, in brief this region was:

- Almost totally isolated from the Nile Valley and the rest of Egypt, except for some dirt roads and a single railway to Kharga, with minimal government representation. The first governor of the New Valley mentioned, after the start of the development attempt, that

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[90] Feddan is a land measurement unit used in Egypt, where 1 Feddan = 4200m2.

because of the region's isolation from the rest of Egypt, it was referred to as an exile to which government employees were sent as a kind of punishment.

- There was a severe lack of services including education and health care, where the inhabitants of the region were virtually living in the middle ages according to the eye witness account of Basyouni (1962), thus, the region had remarkable regional disparities.
- There was almost no use of the natural resources of this region, either for regional or national benefit including mineral resources and water resources.

Hence this region was in a state of regional disparity and had no regional competitive capacities, thus, intervening in this region was a necessity, yet the question would be: to which extent was this regional development intervention successful?

If one considers the pre-intervention situation and the post intervention situation in the region together with the objectives of the project itself, it is argued that the project had not completely failed or succeeded, this is discussed as follows.

Aspects of success

The following aspects of success are recognized as direct outcomes of the project:

- The total isolation of this region came to an end; based on almost five visits to the region, the road network in the region is fully functioning providing a relative easy accessibility to the region, where most of this network was constructed in the 1960s as part of this first project. According to Radwan and Eid (1997) the project finally linked the oases with the rest of Egypt getting it out of the total oblivious state that it had until the late 1950s.

- In terms of other transportation modes to the region, the project was successful in introducing flight accessibility by constructing two airports in Kharga and Dakhla.

- In terms of services: most of the conventional services that are expected to exist in human settlements are clearly visible mainly in the main cities of the region; however, there are still some settlements (mostly informal ones) that lack sufficient services[91].

- The transformation and modernization of Kharga the Capital of the New Valley from a village to a planned city since 1962, was a major accomplishment at that time. It was obvious during the fieldwork visits that the city is indeed the capital in terms of its infrastructure and governmental buildings. The modernization also took place in other cities notably Dakhla and Bahareya but to lesser degrees than Kharga.

Fig 6-9: A village planned and constructed in the 1960s
Source: Google Earth (2006)

- In terms of using the mineral resources, the construction of the Iron ore mine was done together with its miners' city and a railway that transports the extracted iron ore to industrial sites near Cairo. This is considered as a plain dependency relationship with the core, since no industries or activities were constructed in the region.

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[91] The extracts from the literature written about this area in the early 1960s reveals that there was a massive shortage in education facilities and capabilities, there were not enough schools and if existed they were too far, and with no transportation it was very difficult for students to go to school.

[93] The 102 settlements consist of: 36 small villages, 33 villages, 22 central villages, 6 small urban centres and 5 urban centres.

It is quite evident from the above overview that the implementation of this plan had physical spatial impacts on the region which are manifested in the road and transportation networks and the settlements that had been built or upgraded, which made an initial contribution to changing the regional image and landscape of the region.

Aspects of failure
In terms of failures and drawbacks the following aspects are outlined:
- The targeted number of villages set for construction during the first phase of the project was never realized at this period, with only 10 villages constructed at the first five year plan as mentioned by Mahdy (1979).
- According to Radwan and Eid (1997), the cultivated areas in the region had not increased as planned; reaching only 54 thousand Feddans in 1997 most of them were cultivated before the start of the project in the 1960s.
- The targeted population of the region was never reached, in fact in recent days the population of the whole region is about 240 thousand inhabitants in comparison to the ambitious 4 millions of the plan.
- Other supporting projects such as cattle raising were initially successful even with a strong and rapid progress, yet by time many of these projects faded, what basically remained were some agro industries specially the packing and preparation of dates.

Reasons for the outcomes of the 1960s development project

Eventually, another question should be posed at this instant that is: what were the reasons and factors that lead to these failures?

Some of the factors that led to the above failures in are tracked down as follows:

1-The over ambition when setting the development objectives
An interviewed academic refers to the usual *ambitions* of developing countries that had just gained independence and wanted *to realize big scale achievements*, as discussed in chapter five, the funding for such projects were in almost all cases state-funded including the one before hand. Usually the continuity of these projects had to do with the stability of the country, once this stability was shaken, the funding of ongoing development projects would lose the state's attention which would direct its funds to face the occurring instability. This happened to this project when the six days war took place, the funding was immediately cut and directed to war effort.

2- The development approach itself
According to an interviewed GOPP official, the ambition of this project was not based on a scientific planning approach; the main concern at that time was the settling of mass numbers of people through a process of relocation to the study region.

The main economic activity on which this development was based was agriculture, which was the only foreseen activity that was adopted after evidence of sufficient underground water was found. However, since agriculture is based on water, concentrating all the development approach on this activity alone is questionable, which is also an argument raised by some of the interviewed academics.

An interviewed academic considers the whole development approach to the New Valley, ideologically incorrect. He thinks that the region was considered a place for integration with other inhabited areas in Egypt, rather than a place that could pursue regional development. Meaning that the way of thinking at that time handled this place as a potential place for "draining" the population out of Cairo and the Nile valley, as a place for resources that should be exploited and as a place that could be cultivated. The sense here was more of exploitation rather than starting a regional development process.

3- Insufficient studies

An interviewed GOPP official argues that the project fell short of being based on sufficient studies, for example the claim of having a large reservoir of underground water, which is not substantiated with enough evidence. However, the reports written at that time showed significant statements and detailed descriptions of field studies for the project, perhaps publishing these studies were done as propaganda that once again reflects the concept of state's exaggeration in showing its development efforts.

The uncertainty towards water is explained by an interviewed academic, she mentioned that initially when water wells were drilled, the underground pressure was strong enough to keep the water self flowing, there was then a rapid expansion in drilling wells, which eventually resulted in a very weak underground pressure leading to problems in pumping out the water. Should sufficient studies had been done at that time, these problems would not have happened as they later resulted in difficulties in irrigation and the shrinkage of cultivated areas.

4-The six days war

Many of the interviewed academics and officials consider the six days war as one of the main reasons for the failure and halt of the development project in the 1960s.

After Egypt's defeat in that war, everything stopped and all the attention was directed to war effort, besides all the machinery and equipments that were used in that project were left useless and latter sold out as junk. One of the interviewed academics argue that perhaps if this defeat had not happened things would have taken a different course.

5- Other reasons

Some interviewed academics add other reasons for the failures of the project; for example the lack of sufficient urban management and clear executive authority had their impact on the project, in a way similar to the obstacles of realizing the regional development plans in Egypt, discussed in chapter five. Another reason for this failure was related to the promotion of agriculture as a base for development in the region that was applied similar to the cultivation manners done in the Nile valley, which relies on excessive water usage (literarily flooding the fields with water, and did not take into consideration the contextual differences, thus wasting large quantities of water.

6-3-2 Regional development interventions in the 1970s - 1980s

There were no direct development attempts in the study region during the 1970s; however the significance during that decade was to draw the attention once again to the region and the importance of its development.

Development calls of the 1970s

As discussed in chapter four, President Sadat issued the October working paper in 1974, which led to the making of the New Map Policy. This map called for the development axes approach, with the study region forming a north-south development axis to the west of the Nile Valley.

According to Mahdy (1979) president Sadat called for development efforts to be directed to the New Valley, and symbolized this by a field visit to the region in 1978.

However, no concrete progress was made in the region as Sadat was assassinated three years later; the first actual regional development plan for this region was released in 1983, perhaps this plan was scheduled to formulation already during the Sadat era.
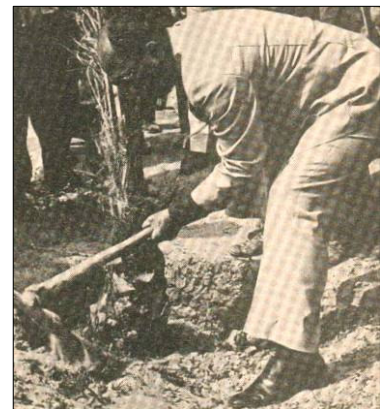
Fig 6-10: Sadat planting a palm during his visit in 1978 to symbolize the start of cultivation according to the Egyptian tradition

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Regional development attempts in the 1980s

The regional development plan for the New Valley region was finalized in 1983 by Dutch consultants, namely Euro-consult/pacer consultants. The plan dealt with the New Valley as a homogenous natural region, disregarding the seven (now six) official planning regions of the country and the provincial boundaries discussed earlier, hence including Bahareya in the plan. The main objective was, once again, to stimulate regional development and promote migration to the region; the difference, however, was that the plan was set based on realistic estimates, which was reflected on the activities considered for development and the number of people that the region can take. These aspects are explained as follows.

Economic bases of the development attempt

According to GOPP (1996), the development plan at that time was bound to use the available resources in the development process. Based on these resources, four types of activities were incorporated in the plan, and these activities were:

1- *Mining*, which would be based on extracting the iron ore, an activity that had been already going on, yet a proposed expansion in its extraction was to create about 2000 job opportunities. At the same time, the extraction of the phosphate ore in Abu Tartour in the south near Kharga was estimated to produce 13 million tons of ore and would create about 3000 job opportunities together with 7500 job opportunities in supporting activities.

2- *Tourism* was considered one of the main activities in the region, focusing mainly on short period visits and safari trips. Hence, a body for tourism development management was to be established to control the quality of services for tourism and provide necessary information and publicity to tourists.

3- *Agriculture* came in the third place, where the availability of ground water was considered the keystone of this process; hence, its careful usage was required. Accordingly the plan estimated the possibility to reclaim 100 thousand Feddans and increasing the productivity of 43 thousand existing ones. This was accompanied by a strategy to enhance the supporting services for this activity including the transportation of agricultural products and establishing a body for the management of agricultural land.

4- *Industry*, where the focus was to enhance the existing industries based on small agro industries and artefacts, yet, future expansion in heavy industries was not foreseen. This is because of the unclear information on the availability of other raw resources such as coal, where it was mentioned that should these resources be found, heavy industries could be considered as another economic sector of activities.

The spatial distribution of these activities was done according to the locations of the existing resources, which are shown in figure (6-11).

Human settlements

A hierarchical settlements' system was proposed and was based mainly on the size and structure of the agricultural activities. The total number of estimated population which the region could host by 2010 was estimated to be 353000 among which 112000 would have been urban population and the rest rural. The population would be divided over 102 settlements, some of which already existed and the rest to be constructed[93].

This continued to follow the strategy of constructing small service centres and focusing on rural development, which was applied before and continues to be considered in the interventions to follow.

Organizational aspects

Organization wise, a committee was to be established for the region to coordinate between the different ministries, agencies and NGOs that are involved in the development process through a steering committee composed of representatives of these bodies.

Accordingly the organization for the development of the New Valley would be formed. This reflects the concern of this plan to involve all possible related actors and starting a form of cooperation between them, which would have been considered a remarkable step towards regional cooperation that comes in line with the concept of networking between actors.
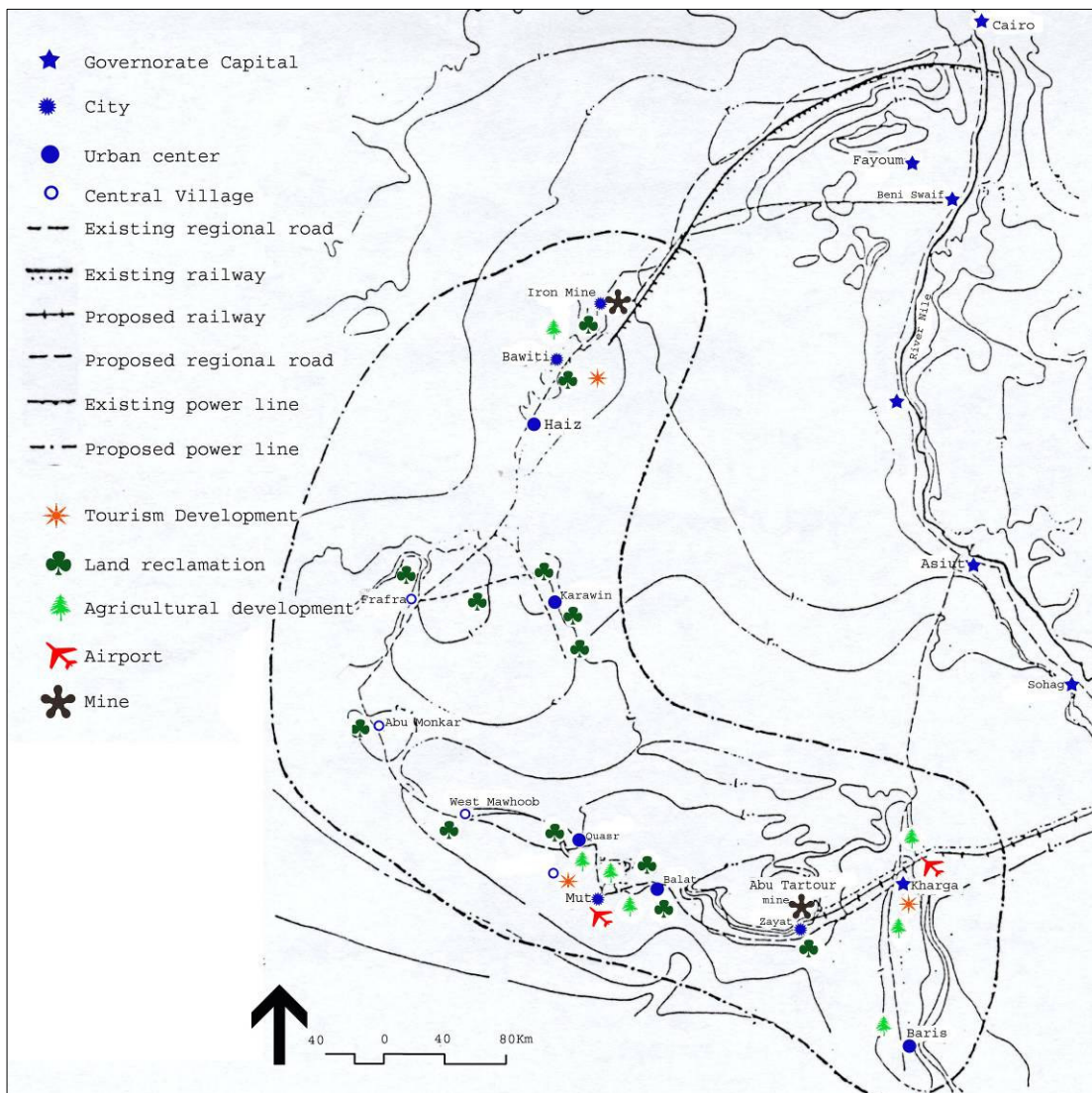
Fig 6-11: The regional development plan of 1983 (adapted by the author)

Critical review on the regional development attempt

The GOPP (1996) made a critical review of the 1983 regional development plan; it gave several criticisms that are reviewed together with reflections from the point of view of this research in the following way:

- The GOPP argues that the development plan was set on the confirmed ground water storage at the time of the study and not on the possible or future potentials that could be proven. Eventually only 100 000 Feddans were designated for agriculture which is not a large area if set for development over 25 years.

However, many researchers and scholars remained sceptical regarding the available water resources and the extent with which this water could be used. In 1997 the area of cultivation in the New Valley was almost equal to that existing in the 1960s before the start of the first attempt, with evident increase in the area. Perhaps being a governmental body, the use of

large numbers to stress on achievements is one of GOPP's drawbacks, as discussed in chapter five, reflecting the attitude of state exaggeration.

- GOPP criticizes that the mining efforts had a strong focus on the phosphates in Abu Tartour, whose potentials were never confirmed, which remains a fact to this day with a lot of controversy in relation to that project that faced and is facing a lot of obstacles, and are further discussed in chapter eight.

- The plan was realistic enough not to consider heavy industries as motors for development. Based on the field visits, it seems that the plan was correct when it did not rely much on possible industries. Later physical plans that were done for the cities in the region designated several lands for industrial use that until now after a decade, since the making of these plans, host few if no industrial activities and these few are mainly agro-industries.

- GOPP criticized the plan for only estimating that the population size that could be taken by the region was to be 350 000 in 2010. From its point of view this population is not adequate to a development attempt in the New Valley or the discharge of people from the Nile valley. Yet, with almost two years left on 2010 the population in all five settlements in the New Valley is roughly estimated to be 250000 that grew from 117000 in 1983, once again this reflects a form of state exaggeration done by the GOPP.

In principle, there is not much to tell about the implementation of this plan, as it seems that few of its suggested interventions were done, unlike the previous one that went through concrete implementation through their earlier phases.

However, this plan introduced the concept of multi economic sectors of activities and stressed on the role of tourism which was not considered in earlier development interventions it was also realistic and cautious when the use of underground water was considered. Finally it introduced the idea of bringing together all related actors to the development of the region to form a committee for cooperation, which was among the significance of this plan.

6-3-3 Regional development interventions in the 1990s

In the 1990s, the general situation in Egypt was improving with a lot of state interventions that included the making of several regional plans and investing in large scale projects to support these plans as discussed in chapter four.

In 1996 GOPP released a new regional development plan targeting the study region, which was part of the Asuit planning region that included Asuit governorate and the New Valley governorate but excluding Bahareya since it belonged to the Greater Cairo planning region.

The plan was targeting the year 2020; however it introduced an initial program spanning between 1995 & 2005, which would then be assessed and adjusted for 2020. It had a general strategy for the whole planning region; however, it also had regional development plans and recommendations for each of the two governorates. This section discusses mainly the regional development plan for the New Valley.

Development strategy for the New Valley

The plan aimed to break the isolation of the region, by fostering economic development that would generate job opportunities and pull factors to eventually attract a remarkable population. The spatial distribution of these activities was done according to the location of their related resources.

Regional economic development

In terms of economic activities, the development plan discussed multiple activities in which possible job opportunities could be created, as such, five main activities were tackled:

1-Agriculture: in which the reclamation of about 705 000 Feddans was considered depending on the availability of water resources. Accordingly, the initial plan for development (until 2005) was seeking to create 73 000 job opportunities through reclaiming 340 000 Feddans. In addition to increasing the productivity of the already cultivated land, which would be accompanied by cattle breeding that would be based on using crops for cattle food.

2-Mining with the possibility of expanding in this activity and perhaps establishing industrial activities as its spin offs.

3-Industries that would be pivoting on three main types: food industries that would create about 2000 jobs by 2005, industries based on minerals, which in principle are based on the phosphates extraction in Abu Tartour[95] creating about 10000 job opportunities, together with small industries such as artifacts and hand crafts that would be serving the tourism activity.

4-Tourism would be promoted by encouraging further archeological activities and diversifying tourism types. This is accompanied by comprehensive marketing and the linkage to other tourism destinations in Egypt such as Luxor and Aswan, together with the resorts on the red sea; thus, it was expected to create about 3000 job opportunities related to tourism.
The plan also stressed on the role of supporting services and infrastructure, hence, the integration of infrastructure together with the activities they support was considered essential and would create together about 5000 job opportunities.

Targeted population

The region was to be transformed into a pull region, especially to the population of Asuit governorate that is over crowded.
The study estimated that the population increase within Asuit planning region would increase from 3 millions in 1995, 3.6 million in 2005 and 4.7 millions by 2020. Accordingly the New Valley was estimated to increase from 138000 in 1995, 310000 in 2005 and 1.1 millions in 2020, where the population growth rate was estimated to reach 7.1% in 2005 as a result of development efforts.
The study also set some recommendations in terms of social development especially in terms of dealing with immigrants to the New Valley from Asuit through proposing a series of actions for their preparation and integration within the society and the living conditions of the New Valley. Finally, the plan recommended that sufficient regional services should be provided in terms of health and education.

Spatial regional development strategy

Since the regional human settlements development strategy of Asuit region was directly affecting the strategy for the New Valley, it is briefly reviewed as follows:

The strategy was based on the following outline and shown in figure (6-12):
  1- Dividing the region into six development zones.
  2- Reinforcing the transversal and longitudinal development axes that link these areas together, represented in the necessary roads to link these zones together, where part of them already exists, hence, constructing the missing links.

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[95] In the development plan, the studies and the future of the phosphate mine and the scope of its production were unclear, however, since the investments for Abu Tartour project were coming from a different budget and from that of the project, they incorporated it as a potential activity and industry, despite not being convinced with it.

3- Stressing on transverse linkages by constructing several transverse roads and railways to reach for cities in the Nile Valley and ports on the Red Sea, thus enhancing the connectivity of the region.

4- To control the urban growth in Asuit province through several actions, among which would be to stimulate some of its population to move to the New Valley. This is supported by constructing more transverse roads to add to the only existing regional road and to introduce regular flights from Asuit airport to Dakhla (Mut) and Kharga airports.

This part of the strategy follows the concept of development axes introduced by the New Map Policy, discussed in chapter four, while focusing on the strategies of deconcentration through such axes as discussed in chapter two.

Accordingly, the proposed ***development strategy for the New Valley*** had the following objectives:

- To link *the New Valley* transversely with the Nile Valley reaching to the coasts of the Red sea, and to reinforce the linkages between the different parts of the governorate together with its regional relationships on the intra-regional and the inter-regional levels.
- Intensification of the rural development attempts within the New Valley through the provision of new sources of underground water and expanding in new areas such as those to the south of Kharga and Owinat.
- Finally the construction of new settlements, and providing them with necessary services to encourage the migration from the Asuit governorate to the New Valley.

Consequently the development strategy was formulated as follows (figure 6-12):

- The setting of 4 development zones in the area
- Creating a strong relationship between these zones through the axis Kharga, Dakhla, Frafra and extending it to the south of Kharga/ plain of Komombo / Owinat.
- Reviving the international route that links Egypt with Africa through Sudan by extending the above mentioned axis using the traces of the forty days route.
- Stressing on the transverse linkage with the Nile Valley though different modes of transportation i.e. through the existing routes of Kharga/ Asuit, and the ones under construction, through railways. These would be extended from Abu Tartour to Quena on the Nile Valley and to end up in Safaga by the Red Sea, through an increase in flights and light planes within the region and finally enhancing and developing telecommunications in the region.
- Stressing the role of the existing urban centers in the region which are Kharga, Dakhla and Frafra, especially Kharga to become a leading development pole for the region, thus, following the strategies of establishing growth poles discussed in chapter two.
- The construction of new human settlements in the development areas in South of Kharga, East Owinat and plain of Komombo to attract population and act as motors for development in the new areas. An estimated number of 564000 inhabitants could be taken in these areas by 2020, 48.5% of that figure could be received in the existing settlements of Frafra, Dakhla and Kharga.
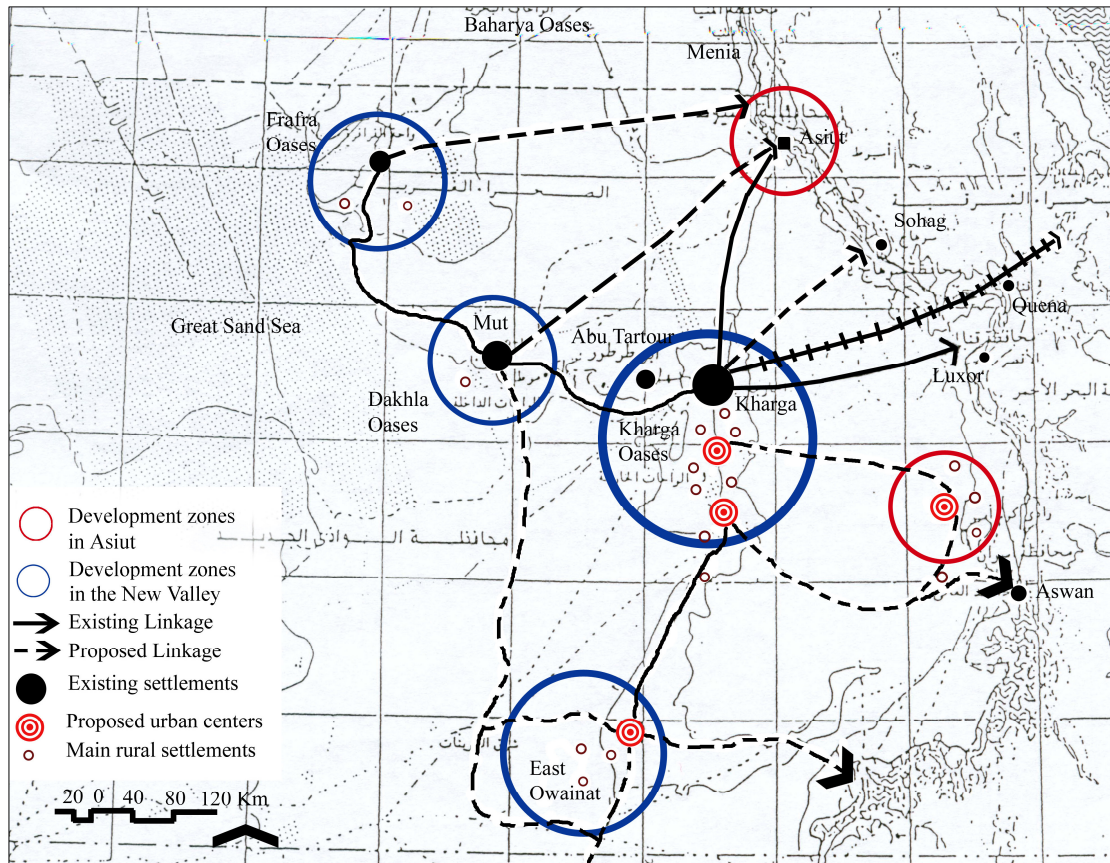
Fig 6-12: The regional development plan of 1996 (adapted by the author)

Critical review on the regional development intervention

Though the strategy had clear and logic long term objectives some of the aspects drawn in it are still questionable and had not proven effective, these are summarized as follows:

In terms of economic development

- Despite that the plan actually considered multiple economic activities, *a strong reliance on agricultural and agriculture-related activities was clear*. This is evident from the estimated number of job opportunities related to these activities which the plan aimed to create by 2020. In reality, the expansion in cultivated lands in 2005 reached almost 100000 Feddans[96] in comparison to the 340000 Feddans estimated by the plan. This does not necessary mean that agriculture is failing as an activity; nevertheless the estimations of the plan were over ambitious in capitalizing on the increase of cultivated lands, this again can be attributed to the aspect of state exaggeration discussed in chapter five.

- As for industry and mining, the only industries that exist in the region are mostly agro-industries. While the mining activities had had several problems with the phosphates ore mine in Abu Tartour, which almost brought the mine to a halt. Eventually, the proposed industries that are based on mining never took place.

- Tourism activity on the other hand, has been slowly growing in the region, yet, in most cases marketing and publicity were usually done by the private sector with limited intervention from the government .This is based on the interviews with the hotel owners in the region, which is further elaborated in chapter eight.

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[96] Statement based on the Year Book of the New Valley Governorate, 2005.

In terms of the targeted population

According to the last population estimates of 2006, the population of the New Valley Governorate is 199000 inhabitants[97], which unfortunately falls short of the population estimated in the plan, especially that the population in 1995 was 138000 inhabitants.

This facts reflect the usual ambition and state exaggeration in announcing the targeted figures for the development projects.

In terms of spatial regional development

- For the new development zones in the New Valley, indeed the areas south of Kharga are witnessing gradual development, yet in a slow pace. Reclamation activities were going on along the historical forty days route "Darb el Arbaeen" that continues south till Sudan, where six villages were constructed (figure 6-13), and four of them already got inhabited by 2500 inhabitants. But it is difficult to judge to which limit will the land reclamation activities reach, which depends on the availability of water.

- For the new proposed urban centers, the urban planning of some of them took place such as the city of East of Owinat (Sharq Al Owinat). These intended cities were taken into consideration in the next strategic plan for the region.

- For transportation and road networks, nothing much has been achieved towards the transverse linkages with the Nile Valley, except for the road linking Luxor with Kharga, which had major benefits for tourism.

- For domestic flights, there was a recent drawback, as there used to be two weekly flights from Cairo and Luxor to the New Valley, however these were suspended as early as 2004. However, there was a recent replacement in 2006 with one weekly flight, this is further discussed in chapter eight.

- As for telecommunications, according to GOPP (2000) the New Valley is considered the only governorate in the south of Egypt with adequate service, in terms of phone lines, as for the internet, free access exists, however, with a dial up speed.
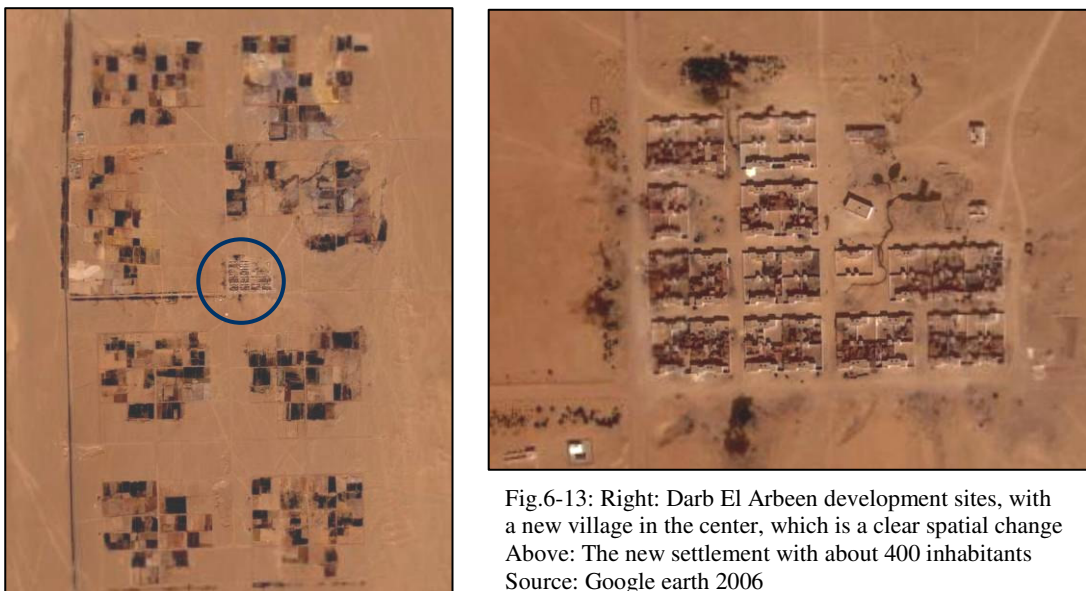
Fig.6-13: Right: Darb El Arbeen development sites, with a new village in the center, which is a clear spatial change
Above: The new settlement with about 400 inhabitants
Source: Google earth 2006

An important contribution of this plan was to pinpoint two critical issues related to the development process; these are: regional borders and development management.

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[97] This Figure was driven from the information supplied by the New Valley governorate, and amended with the outcome of the field work.

- For *regional borders*:

The plan considered the existing boarders inadequate to the characteristics of the units composing the Asuit region in relation to its vast area, which is about 44% of the total area of Egypt, causing a lack of homogeneity and neglecting some of the natural elements that integrate with the region such as Bahareya.

The study recommended an alternative to the current borders which included the addition of Bahareya to the New Valley, to be integrated in its development attempts.

It also recommended the addition of Asuit governorate to the planning region of North Upper Egypt, which is more homogenous to it, the addition of some parts of the New Valley to form the hinterlands to the Nile Valley Governorates, and finally and most important was the division of the New Valley into three development zones to facilitate the development process.

However, the plan declared that until legal actions are taken, the regional development plan was set according to the existing borders.
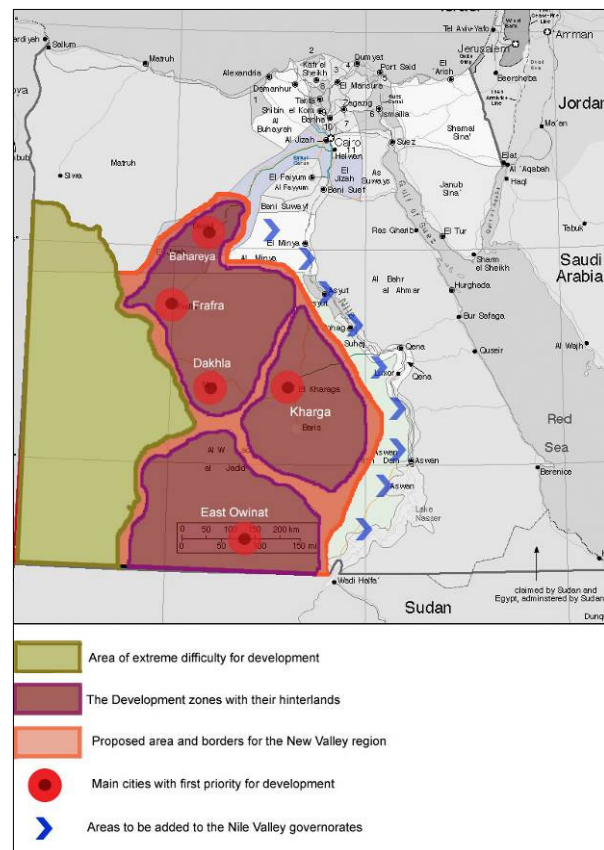
Fig 6-14: The proposed regional borders & development zones (adapted by the author)

- As for *development management*:

The study called for radical legislative and administrative changes within the local government system, to promote for governance and giving more power to local authorities in raising local revenues e.g. taxes, while giving executive powers to the local bodies and increasing their capacities for development management.

However, the plan makers admitted, at that time, that it is unlikely that major changes in the system could be done. Alternatively, they called for amending development management by accepting the current system, but adjusting the deficiencies in its structures.

They also stressed on the importance of taking actions to support the decision making process through coordination between the executive and local authorities, stressing on the integration between the different governmental bodies, and at the same time calling for public participation in decision making. They also went further and called for establishing a regional council for development that would be responsible for development planning and management that would take into account, the spatial, economic and social dimensions.

This last aspect is considered as an early call for decentralization and empowering the local levels of government. It also calls for engaging related actors in the development process and the making of development plans from the region. These ideas come strongly inline with the success factors required for introducing networking within regional development discussed in chapter three.

6-3-4 Strategic plan for developing human settlements in the "South of Egypt"

In the year 2000, GOPP finalized a strategic plan for developing the human settlements[98] in the South of Egypt which included the four groups of settlements belonging to the New Valley Governorate.

The significance of this plan lays in the fact that it is the first time to consider strategic planning in Egypt instead of the traditional comprehensive planning model and carrying out SWOT analysis as part of the planning process. It took into consideration the effects of globalization and the concepts of think global act local, declaring that the typical central and top-down approach would not be successful in this era. Therefore it also took into consideration the concepts of new regionalism, which was something new in Egypt at that time.

The starting point of this strategic plan resembles the previous ones in terms of stressing on the problem of the packed Nile Valley that embraced 95% of the Egyptian population but only counted for 5% of the total area of Egypt, hence, developing other areas in the country to take the population increase was necessary. The targeted area of this plan is an area in the south of Egypt, which is occupied by six governorates: Asuit, Sohag, Quena, Aswan and the New Valley. This area is inhabited by almost 10 million people.

The structure of the plan

The plan was divided into two parts; the first one analyzes the features of the targeted area with its problems and potentials tackling the area's natural resources, its urban environment, and its economic activities. While the second part highlights the different roles that should be set to human settlements in the region and outlines their basic needs that should be met. Accordingly, a SWOT analysis was conducted to come up with a future vision for the region.

Finally strategic projects were proposed according to the vision statement that was realized; where these projects would later to be discussed with the different stakeholders in the region for their implementation. In a later contribution, three pilot areas were selected for pilot projects, among which, was Frafra that is discussed later in this chapter.

Obstacles of development

To come up with a vision the study first highlighted the main aspects that could affect the development attempts in the region; these are:
- The efficiency of the communication networks between the activities and the people in the study region and other regions in Egypt.
- The road and transportation networks that link the settlements of the study area together, to other regions in Egypt and to the locations of raw materials, which need to be upgraded and developed.
- The efficiency of the human development factor, relying mainly on government inputs in the health and education sectors.
- The shrinkage of the cultivated lands in the Nile Valley, a problem that could be tackled through directing growth towards the desert by activating the government's plan of constructing 18 new settlements in that area, together with intensifying the attempts for land reclamation.

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[98] The human settlements in the region were categorized into four types: the human settlements along the Nile, the human settlements in the Western Desert, mainly the oases, the proposed human settlements adjacent to the Nile Valley (11 settlements) and the proposed human settlements in the New valley (7 settlements)

- The un-used potentials for tourism development, where several attractions and monuments are scattered in the study area.

The study then highlighted the importance of stressing the aspects of raising the capabilities of the population to deal with modern technologies, the sustainable relationship that should grow between people and natural resources to avoid their depletion, and the institutions and organizations that mediate and help local people to achieve their objectives.

The Future vision

The team of planners and consultants who worked on the plan[99] took into consideration the aspects of new regionalism, discussed in chapter two, by acknowledging that the concept of a central hierarchical system of settlements depending on one strong urban center is not suitable to face the current challenges. Instead they stressed the need for cooperation and partnerships for development between the settlements of the region (GOPP, 2000).

Hence, the future vision set for regional development stressed on the following:

1- Increasing the accessibility and transportation to and between the different settlements of the region, and to other areas with un-used resources, while at the same time stressing the connectivity with other regions both on national and global levels.
2- Supporting the industry and increasing the flow of information on the inter-regional and intra-regional levels.
3- Focusing on human development aspects by holding different programs on health, education and training for modern technology for all the sectors of the society.
4- Increasing the use of available resources within the limits of sustainability, while investigating and searching for other resources e.g. minerals, water and reclaimable lands.
5- Upgrading the existing built up environment to coop with the needs of future generations.
6- Conserving the local cultural identity that would witness development intervention, and the careful handling of social and political dimensions among the different stakeholders when constructing new settlements.

Hence the study recommended some themes of strategic projects for regional development, which focused on the same activity sectors discussed in the 1996 plan, however, this time the types and details of the projects were to be decided with the related investors and stakeholders. These themes are reviewed as follows:

A- *Agriculture, irrigation and cattle breeding*: the aim is to reclaim about 2 million Feddans, of which almost 1.1 million are located in the New Valley around the new canal of Zayed in Toshka, Owinat and other places in Kharga and Dakhla, in addition to another half a million Feddans that could be cultivated should the canal from Toshka be extended to the west. The intention was that these projects will get a technical support by constructing regional research centers to provide advice and technology.
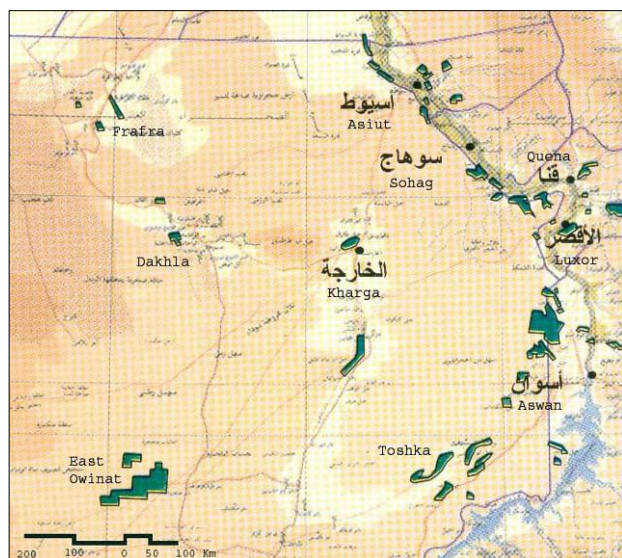
Fig. 6-15: The proposed locations for agricultural

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[99] Note that at that time the full involvement of actors was not yet taken into consideration.

B- *Industry: In* addition to the general recommendations for training on modern technology and fostering small local industries and agriculture-related industries, the plan recommended the laying out of infrastructures at the locations designated for industry in East Owinat, Toshka, Dakhla and Kharga.

C- *Tourism:* the plan proposed to establish a full integration between the tourist places through common programs that would link the monuments and sites in Luxor and Aswan with those existing in Kharga and Dakhla. This is the first time that the idea of integrating tourism sites on the regional level was considered. The same idea is investigated in depth in chapter eight and the possibility of establishing a regional network for tourism is discussed in chapter nine. The plan had also suggested the construction of several hotels in Kharga to facilitate tourism based activities.
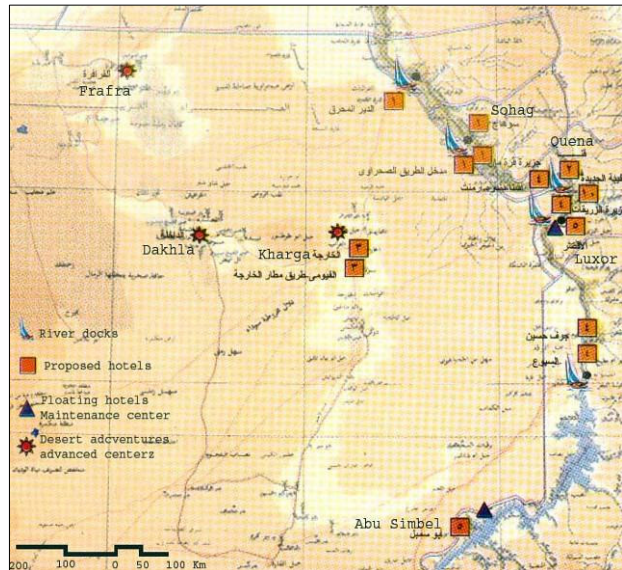
Fig. 6-16: Interventions for tourism development

D- *Built up Environment:* the plan recommended continuing the construction new settlements and linking them with already existing cities. It also stressed on increasing the accessibility and communication, enhancing the quality of services provided to existing settlements and establishing regional support institutions for rural development in the desert.

E- *Accessibility and communications:* the plan recommends the extension of the railway linking Cairo with Bahareya to Frafra, Dakhla and Kharga, where it could be linked there with the railway going to Asuit in the Nile Valley, in addition to extending it south to Owinat and parallel to Darb EL Arbeen. The construction of transverse rail linkage with the Nile Valley was also recommended. As for the road networks, enhancing the roads from the oases to El Alamein in the North and the construction of transverse roads with the Nile Valley was a priority.

For telecommunications, the plan stresses on the importance of
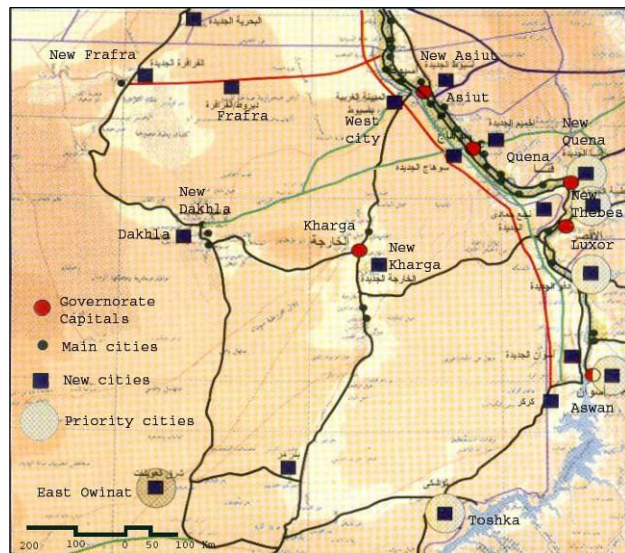
Fig. 6-17: Human settlements development in the New Valley and the interventions in accessibility networks with new roads in red and railways in green

providing ICT networks as new services to these areas, while linking them to local and international networks, for optimum communications.

Critical review on the regional development attempt

It might be early to discuss the outcomes of this plan since it has only been realized few years ago, however, some remarks could be made at this point:

- The plan differs in its preparation mechanism from the previous plans. As discussed earlier, in making the plan the concepts of new regionalism were taken into consideration and favored over traditional central systems of the settlements. It is also considered the first strategic plan that is made in Egypt, which tried to introduce a future development vision for the region.

- The plan stresses the role of new settlements, and encourages carrying on the construction of the 18 new settlements proposed by the National development plan of 1998, discussed in chapter four, together with the expansion in other sectors of activities. This, however, is questionable (i.e. construction of settlements) since the experience of the new cities in Egypt have not proven much of a success in the last three decades, to capitalize on this concept once more might not lead to the perceived outcomes. Instead it is argued that developing existing settlements and making them attractive for people should be the first priority, once these settlements reach their carrying capacity of people, then the construction of new settlements should be considered.

- The plan mentions the possible agricultural activities, in Darb EL Arbeen, East Owinat and Toshka. The first two were mentioned in the previous plan; Toshka is mentioned here for the first time, since it started after the making of the 1996 plan. Despite the presence of an experimental farm and the export of its agricultural products to the Gulf countries and Europe, this project is still controversial, as mentioned earlier in chapter four, to the extent that the officials in the New Valley governorate were advised not to consider it in further development plans in 2006 (a statement mentioned by a provincial personal during the field work).

6-3-5 Reflection on the previous development attempts in the study region

The development of the study region, has been taking place since the 1960s. In almost all the development interventions the main regional spatial development strategies were based on the concepts of establishing a development axis parallel to the Nile valley, while strengthening it with starting new rural communities that are supported by small service centers.

As discussed earlier the previous interventions and plans in the study region neither failed nor succeeded in fulfilling their objectives.

Only some of the intended interventions were realized, but they were enough to break the isolation of the region and to link it to the rest of Egypt; and by this succeeding, to a certain extent, in changing the cultural perception towards the region and considering it part of Egypt and not another forgotten desert.

However, these successive interventions failed in achieving their main objective, which is the relocation of millions of people from the Nile valley to the New Valley. As explained by an interviewed academic/consultant, the majority of the development plans for the region aimed for transforming it into a possible drain for excess population from the Nile valley rather than developing the region simply to make it better and alleviate its regional disparities.

The plans could not fulfill other objectives as well, such as developing the possible mining activities, especially those of phosphates, or creating spin-off industries based on this activity.

Based on the analysis of the previous development interventions in the New Valley, some needs could be reflected, which should be taken into consideration when formulating any future development attempts in the region, these are:

- There is an urgent need to ensure that development plans would be implemented, where lack of implementation is a major drawback in the regional planning projects in Egypt, as discussed in chapter five. Therefore, organizational rearrangements, legislative modifications and an appropriate development and implementation management are required, which was a notion reflected also in the 1996 plan.
- Despite that some of the plans since the 1980s referred to multiple economic activities in developing the region, most of the development efforts capitalized on the agriculture activity, making it a mono-activity approach for development. Hence, it is important to build on other activity sectors to ensure that whenever there is a depression in one sectors, the development of the region would continue by the rest.
- Accessibility is considered an extreme necessity for the development of the region, in order to speed up the development attempts, the region should be fully accessible, not only through the existing road networks, but also by focusing on developing different modes of transportation such as railways, air transport, and even ordinary public transportation.
- The need for considering Bahareya as an entity belonging to the New Valley governorate in terms of its homogeneity and common properties, which should be reintegrated in further development attempts in the region. At the same time the concept introducing new manageable borders of the New Valley with its sub-divisions into small development zones, an idea that was raised in the 1996 plan, should be realized in future interventions in the region.
- It is important that the regional development objective should be to improve the region's competitiveness and alleviating its inequalities, consequently making it more appealing and indirectly attracting new comers from the Nile valley on a long term vision and not setting the transfer of 4 million people as a main objective.

Certainly, these arguments together with some aspects, which were proposed in the successive development plans, are taken into consideration in the later chapters of this thesis, which discuss the possible future attempts in the region based on networking and networks.

In order to understand the impact of such regional development interventions on the settlements of the region, the settlements' group of Frafra is chosen as a case study to conduct such an analysis. It also seeks to deduce some lessons and aspects that would be considered in future interventions in the region, as has been done in the above debate.

6-4 Urban and rural development and planning in Frafra

The Frafra group of settlements is considered to be a sub-region from the case study region. This sub-region was subject to three interventions for regional planning and development that targeted both its rural and urban areas. In order to present a coherent case, these interventions are presented in a chronological way; the first was the informal rural development that started in 1995, and continues until now, the second was the making of the physical plan for Frafra city in 1998, which was a top-down intervention, while the third was the project of "the proposed settlements' pattern in Frafra" in 2004. These cases represent different experiences that show examples of social networking, co-production, top-down planning, and an attempt for planning by participation. Because of these interventions, Frafra was chosen as an example from the region to be presented in order to gain some lessons that are considered when discussing the proposal for regional development based on networking in chapter nine.

6-4-1 Informal rural development in Frafra

In 1994/1995, thousands of farmers from different parts of the Nile Valley started to migrate to Frafra to work in agriculture and land reclamation. During the field work in May 2006 it was possible to visit the area and hold several interviews with some of these farmers (see annex 4 for the questions posed in the interviews) and with Dr. Mohamed Rafaat the mayor of Frafra, who gave an account on this case in which he was personally involved[100].

Background settings

In the 1980s the government initiated several projects for young graduates & investors to encourage cultivation and land reclamation in the oases. These were based on selling land for low prices and supplying it with sufficient irrigation water by drilling wells for underground water. However, at that time not all landowners showed immediate intervention in their lands, consequently that led to an excess overflow of underground water that was not used.

According to the official documentation, the water flowing in the irrigation sewers at that time was a mixture of irrigation water that was already used by existing farmers and large quantities of fresh water coming from that overflow, which caused pools of excess water to appear in several places.

Migration and settling

The case started when bus drivers working on routes between the Nile Valley and this area took pictures of the pools of excess water and showed them to their friends back in their villages. Eventually the people believed that there might be opportunities in this area that can help them in enhancing their living standards and seeking land ownership, therefore they decided to move to Frafra.

When they arrived, the migrant farmers lived in temporary shelters before finally settling down. They later sent for their families and built permanent houses, as mentioned by some of the interviewees. They started cultivating and reclaiming lands outside the official cordon of Frafra, using excess water flowing in the irrigation sewers for irrigation.

Fig.6-18: Temporary houses were built first, and then later transformed to permanent houses

Fig.6-19: An irrigation sewer that migrant farmers used its water for cultivation

However, because of legal complications at that time, the migrant farmers could not obtain ownership rights for the land they cultivated. Nevertheless, they had reached an informal agreement with local officials responsible for monitoring development attempts in Frafra, which entitled them to keep the land as long as they pay a minimum rent.

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[100] Dr Rafaat also held the position of the vice governor of the New Valley governorate, having met him 3 times during the different field work visits, he could be judged as an ambitious person seeking for the development of the place, and also a critic to government actions, though he himself is working for the government.

Many of the migrant farmers started informing their networks of friends and family in their home villages about the opportunities in the area, eventually, starting a migration process.

At a certain moment the media also played a role in motivating many farmers to migrate. During the interviews some of them declared that they were motivated by a speech given by the president in 1995 asking the people to seek prosperity in the New Valley.

The migrant population in the second half of the 1990s reached 8000 inhabitants who transformed 12,500 Feddans of desert into cultivated land in comparison to only 2000 Feddans before their arrival. According to official statistics the majority of the produced wheat in Frafra came from them.

Fig.6-20: Migration from different governorates in the Nile Valley

The implications

Having seen the results of the migrants, the graduates and the investors came back to their properties and started cultivating as well. However, with the water wells being used now by their owners, the migrant farmers were faced by lack of sufficient water to continue cultivating their lands.

The migrant farmers had to irrigate with what was left of the water after being used by the legal land owners within the administrative cordon of Frafra. Many of them felt it was unjust that having reclaimed vast areas of land outside the cordon, their needs for water were not taken into consideration. Consequently, the cultivated areas outside the cordon started decreasing to reach 6500 Feddans after being 12500 Feddans

Fig.6-21: Reclaimed land in the desert; initially large areas started shrinking due to water shortage.

at the peak of the reclamation process. At the same time many farmers could not carry on to cultivate their lands, which caused them to suffer from severe financial problems.

Government reaction

The migrant farmers started to make complaints and ask the local government for assistance. The Local and provincial governments could not ignore the situation (even if these migrants did not have property rights), especially that they actually carried out, informally, the government national objectives of reclaiming desert lands and moving away from the Nile Valley. Consequently the case was taken to the parliament by the provincial government and a parliamentary committee was sent to the region for investigation.

Fig.6-22: well drilled supplied and drilled by the government.

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As a result, the ministry of irrigation and water resources was asked to drill 58 new wells to support the farmers, and steps towards giving them full ownership of their lands were done[101].

Impacts

The impacts of this case on Frafra were very tangible, not only in terms of physical and spatial impacts but also in terms of socio-economic aspects.

Spatial impacts

In settling down, the migrant farmers managed to build new villages, exclusively on their own; these villages are home to 19000 inhabitants. It is important to stress that the migrant farmers make up the majority of the population in Frafra. After the intervention of the parliament, these villages were legally recognized and treated as permanent settlements. The local government gave the people ownership rights to the lands that host their homes, and is currently working on supplying basic infrastructure and services to many of these settlements that were initially informal.

Of course the most remarkable physical difference is the increase in the cultivated land to reach 28000 Feddans in 2006 whereas it was only 2000 Feddans in 1995, which also had its effect on the economic situation in the area.

Fig.6-23: An informal migrant village: Satellite image (top) & field view (bottom)

Socio-economic impacts

The new comers were coming from different places and contexts in Egypt however, Frafra acted as a melting pot for all these people who reinforced this through marriage from the different migrant groups, thus, the difference gap faded away.

The new comers brought with them activities and skills that were not known in Frafra like car repair shops, furniture shops and even new modes of transportation like the Tok-Tok (figure: 6-25), which is widely used in the Nile Delta[102].

Finally, with a lot of people coming from the Nile Valley and its Delta, many private transportation companies started to operated between Frafra and the above regions in Egypt, which are basically the origins of the migrant farmers[103].

Fig.6-24: Tok-Tok as a mean of transportation

This case represents an interesting example on development by co-production, between the people and the local and provincial governments. Co-production of policy and implementation is explained by Van den Broeck et al (2004) as the involvement of groups of

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[101] Already 12 wells have been drilled and functioning, yet until the rest of the wells are drilled, some of the farmers are still complaining as witnessed during the field visit.

[102] Tok-Tok is actually a tricycle that first appeared in the Far East in countries like India and Bangladesh, and is used as mean of transportation resembling a taxi. It entered Egypt five years ago specially in the Northern Nile Delta, where Egyptians called it tok-tok referring to the noise coming from its engine.

[103] At the side of the main road of Frafra, a local café is situated, this café is considered as an informal bus stop where, it was easy to monitor in two hours the different destinations that the buses take.

civil society (in general) in debate, discussions and active decision making process for development policy and its implementation. A close situation to co-production is noticed in Frafra, both indirectly and directly.

Indirectly, at the beginning, when the migrant farmers started using the existing infrastructure done by the government manifested in the water from the drilled wells, though these wells were drilled for other users. And directly when the government intervened and supported the efforts of the migrant farmers by drilling the necessary wells and supported their activities in land reclamation and cultivation. In succeeding to get this support, these farmers proved that with sufficient organization, they can exert pressure on the government to respond to their needs and overcoming the typical Egyptian bureaucracy that cripples similar attempts.

The case also represents an example of social networking where the inflow of migrants who came to this area, managed to settle down with the help of their friends and family who arrived earlier to the area, in which, a state of cooperation and support took place between earlier migrants and others who followed.

It is to be mentioned also that there is a similar case in Bahareya oases, in which few thousands of farmers migrated from the Nile Valley and Delta as early as 1988. However, despite making similar calls for help like those done in Frafra, some communities were legalized and granted support from the government, while others are still striving for it. Perhaps the main reason for this, as described by Dr. Rafaat, is that in Frafra the new comers had a large proportion in relation to the local population, which was considered a phenomenon that could not be neglected, but in Bahareya, the migrant population did not reach the same level. Nevertheless, when asked about their preferences, the migrant farmers in Bahareya stated that they would stay and carry on with their attempts, since they considered their chances of better living in Bahareya more than those in their home villages[104].

6-4-2 The Master plan for Frafra City

The master plan for Frafra city was finalized in 1998 by GOPP, this plan was based on the assumptions drawn earlier in the regional development plan for Asuit region in 1996.

It assumed that the economic and social development actions that were proposed in the regional plan would be implemented, thus creating many job opportunities in the cities of the New Valley, including Frafra, therefore inner migration from Asuit governorate would most likely take place. The forecasted population in 2020 was set to 30000 inhabitants to increase from 4100 inhabitants in 1998 over four growth periods.

Economic activities

The plan considered agriculture as one of the main economic activities possible to create job opportunities. This was based on the dramatic increase in reclaimed lands in Frafra between 1995 and 1998 as a result of the efforts made by the migrant farmers, together with the estimates showing that some 50000 billion m3 of underground water exist in Frafra.

Tourism and small industries were also considered as prominent activities, with possible industrial activities that could be based on mineral resources available in the oases in addition to supporting services activities.

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[104] A similar investigation was done in Bahareya during the field work.

The plan

Based on the earlier expected population, the construction of 6500 residential units was recommended by the plan to host the population increase in the city that would be 26000 inhabitants over 20 years. This was to be accompanied with the supply of necessary services for this increase.

The plan proposed that the city would take an oval shape as implied by the geographic & topographic settings. A ring road would surround it, with a main road passing through the center of the city which would lead to Bahareya in the North and Dakhla in the South.

The city was planned in a hierarchical way to include two districts that would include together five neighborhoods each of which would include four residential groups. Proper service centers were also proposed in a hierarchical way starting from the city center, district centers and neighborhood centers. The final master plan included the proper road networks and the distribution of services and different activities.
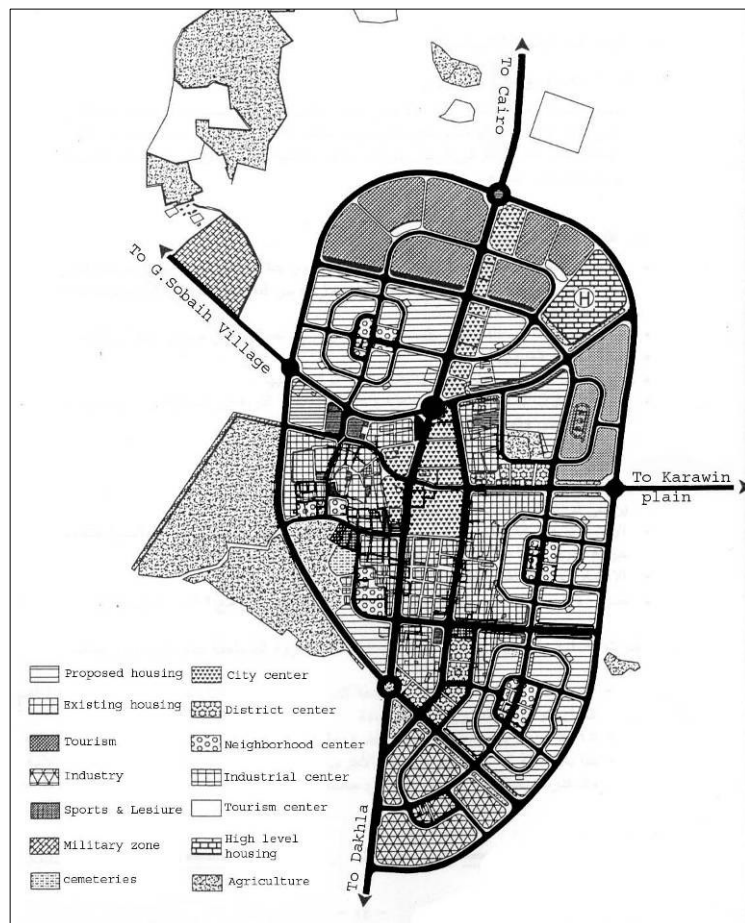
Fig6-25: The Master Plan for Frafra City
Source: GOPP (1998)

The outcome

The outcomes of the plan could be discussed in terms of both its physical, economic and demographic dimensions.

- For the *Physical dimension*, the only visible element of the master plan that was realized is a large part of the road network especially the ring road surrounding the city (figure: 6-26). yet for the division and rearrangement of the city into five neighborhoods with their service centers was not realized or even detected visibly.

- As for the *economical dimension*, agricultural indeed prospered and the expansion in reclaimed lands increased, not as an outcome of the 1996 regional plan, but as a result of the efforts of the migrant farmers, which were later supported by the local and provincial governments, as discussed earlier.

Like agriculture, tourism has been growing as estimated by this plan, but not as an outcome for the regional plan of 1996. It was noticed during the field work that several hotels and smaller camp sites were operational in the area, yet again, the increase in this activity primarily happened because of private sector initiatives and not because of direct government attempts.

Finally for the industrial and mining activities, there had not been any significant change or growth, which was estimated in the plan.

- Finally, in terms of demographics, the population of Frafra city had not reached the 8500 inhabitants in 2005 as estimated by the plan, as it hosted 3700 inhabitants in 2006 (Frafra year book, 2006). Nevertheless, the population of the Frafra group of settlements in total had increased seven times by 2006 to reach 21000 inhabitants, mostly in the villages of the migrant farmers surrounding the city.

From the above overview, it can be argued that the plan did not take into consideration the surrounding events when it was being made. As seen, the plan acknowledged the increase of agricultural lands because of the migrant farmers; however, the planners did not pay attention in their proposal to support them. They built their estimates that there will be an increase in the population of the city for people coming to work in support-services to agriculture, tourism and industry.

However, the expected increase did not happen in the city but it took place in its surrounding villages. Perhaps the main problem here was that planning was based on

Fig.6-26: The actual situation in Frafra in 2006, with only the right side of the ring road and the main rcentral road constructed.

direct and specific demands from the GOPP, which made the planners fulfill these demands (in a pragmatic way) and not taking into consideration the actual regional changes that could affect the making of the plan. In addition, the planners did not really consider the contextual needs of the people; as stated by an interviewed GOPP official (in 2005) [105].

6-4-3 Planning by participation in Frafra

The strategic plan for developing human settlements at the South of Egypt, which was finalized in 2000, suggested several themes for strategic intervention, as discussed earlier in this chapter, including human settlements and built up environment. It stressed on continuing the policy of constructing new settlements, but also enhancing the existing ones, where Frafra was selected to demonstrate one of the pilot interventions for this policy.

This pilot intervention came as part of a project to implement the strategic plan of 2000, and was officially known as "The project for the mechanisms of implementing the strategic plan for developing the South of Egypt". The intervention in Frafra was known officially as "The proposed pattern for rural settlements in Frafra", the planning part was finished in 2004.

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[105] Ironically, the interviewed official was the team leader in preparing the plan for Frafra, yet, the whole ideology of planning is currently changing, perhaps this is considered as a way of self criticism.
[107] This information was obtained through the interviews held with one of the consultants involved in the project and a GOPP official.

Background

This intervention was carried out by GOPP; however, it also received funding from the UNDP, after it agreed that the planning approach would be based on participatory planning, by including citizen groups and local communities[107]. Accordingly, the project was an opportunity of change to this approach and to achieve related objectives such as the capacity building of the GOPP cadre in planning by participation and that of the local actors in terms of participating in the planning process and development management and finally to set a procedure for implementing the development plans and coordinating between private and public sectors.

In 2003, planning experts visited Frafra to find out how far the 1998 plan for Frafra was useful to local population. They invited local people and asked them about the benefits they had received so far from this plan; they answered that they had almost no benefits and they are still lacking a lot of services, especially in villages. They also investigated the case of the migrant farmers that had been taking place sine the 1990s and decided, with the GOPP and the UNDP, that the intervention in Frafra would consider two main issues: The first one was to conclude the lessons learned from the development intervention of the migrant farmers and the possibility of developing it into a development policy together with adjusting sufficient laws and legislations that would support their development intervention[108].

The second issue aimed to rearrange the settlements pattern in Frafra to ensure a fair and sufficient distribution of services and adequate home to work relationship for both local and migrant population. It basically focused on improving the existing environment in general and introducing new settlements if needed, instead of the traditional aim of relocating people to the desert; this project is known as the proposed pattern for rural settlements in Frafra and is briefly discussed as follows.

The proposed pattern for rural settlements in Frafra

Professor Bakrey[109] was the consultant assigned by the GOPP to work on the proposed pattern. His starting point was to declare that the traditional approaches of settlement planning that were applied previously in the region are not suitable for desert conditions, therefore there is a need for a different approach to match with this context.

The current situation

According to Bakrey (2003) the existing situation in Frafra reflects some key issues that should be taken into consideration and tackled carefully, the main three issues are:

- The scattered historical settlement pattern that exists which is basically composed of small settlements located near water wells for irrigation.
- Because of the previous inappropriate planning attempts, the services are mainly concentrated in the center of the settlements that is the city of Frafra, at a time where poor accessibility between the center and its peripheries is evident. Therefore, the actual use of these services is limited to the city population.
- Finally the hierarchical structure of the settlements is inappropriate and disproportionate in terms of service provision. The majority of small villages are dependent directly on three bigger villages for their services, which in turn are dependent on Frafra city for specialized services.

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[108] This information was driven from the executive summary issued in 2003 regarding the aims and the intended outcomes of the pilot projects.

[109] Professor Bahaa Bakrey is a professor of Architecture in Cairo University, who worked extensively in desert areas, he also had done research and proposals on regional and national development in Egypt, and he was also one of the academics and professionals interviewed in 2003 in regards to the thesis within hands.
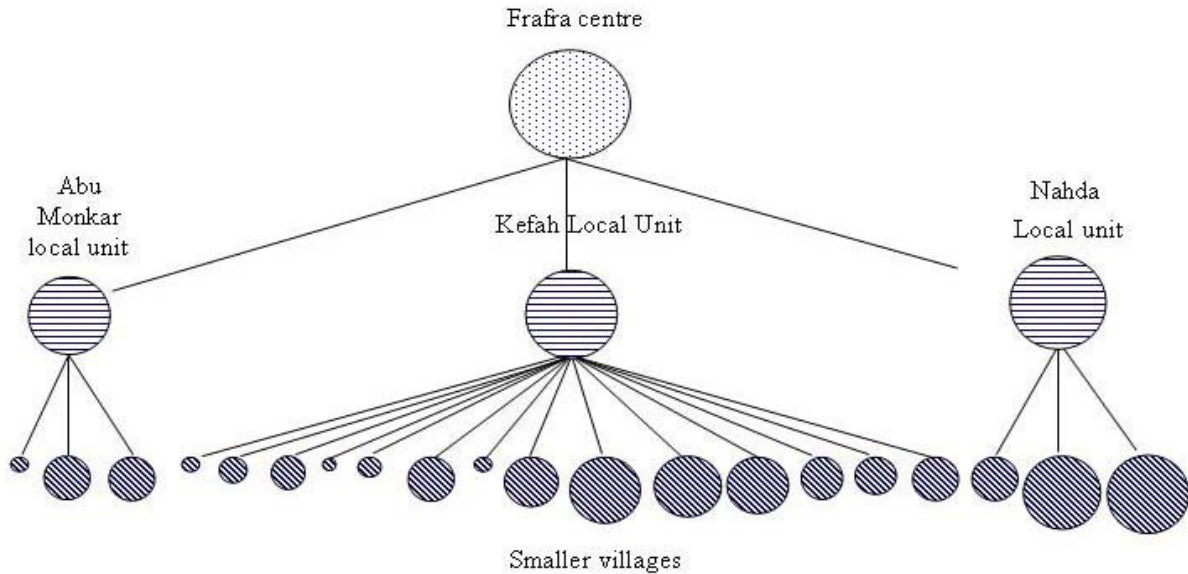
Fig.6-27: The existing settlement structure in the Frafra group of settlements
Source: GOPP (2004)

Based on the above situation, Bakery's concept aimed to rearrange the hierarchical pattern of settlements in terms of adequate service provision, in which he considered water wells the basic structuring unit for this pattern.

The concept of the proposed pattern

The concept of the proposed pattern, as presented by GOPP (2004) acknowledged the existing pattern of small settlements because of its direct dependency on available water resources; however it would focus on improving the existing settlements through:

- Stressing on the hierarchal distribution of settlements in terms of their size and function that would support an optimum production process.
- Creating a balanced relationship between the location of home and work and creating a reasonable distribution of services that would be appropriate with the natural and climatic conditions of Frafra.
- Upgrading the built environment and supplying it with necessary infrastructures.
- Achieving optimum accessibility within the Frafra group of settlements, through enhancing transportation and telecommunication infrastructures, to ensure either easy mobility of people to services or the mobility of services to people.
- Stressing on the controlled use of water in irrigation and other activities and the provision of more job opportunities in agriculture related activities.

Therefore the hierarchal pattern is composed of five ranks of settlements structured in the following manner; within each are their appropriate services that increase in size and diversity as the settlement size increases and support the lower rank of settlements that follow it:

- *The small village*, which would be the building block of the pattern is based on 3-4 water wells and is composed of 400 to 300 inhabitants and covering a built up area of 10 to 13 Feddans, with a service range covering 2.5- 4 Km. This rank should have the following services: Kindergarten, (one classroom) school, prayer area, clinic and storage facilities.
- *The satellite village* which supports 3 or 4 small villages with a population of 1500 to 2000 inhabitants covering a built up area of 40 to 70 Feddans and is set on almost 10 water wells. The physical structuring element that binds these settlements together would be the irrigation sewage network, with the village's service range being 3-5 Km. This type should have the following services: kindergarten, elementary school, health care centre,

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youth centre, commercial centre, post and telegram, security point, workshops, social service unit, agricultural service unit and light domestic industries.

- *The service village,* which supports 3 to 4 satellite villages and hosts a population of 4000 to 6000 inhabitants over a built up area of 250 Feddans. Its service range is 8 Km, with the physical structuring element being the irrigation sewage lake that serves the group of villages. This rank should have the following services: Secondary school, hospital, veterinary hospital, police station, social service unit, rural development centre, youth centre, and agriculture related industries.

- *The central regional village* that supports 2 to 3 service villages which is of a population of 6000 to 8000 inhabitants with a service coverage range of 16 km. This rank would host the necessary specialized services for the settlements' group such as administrative, educational and health services plus possible agriculture-related industries.

- Finally at the top of the hierarchy would be a *small city* of 30000 to 40000 inhabitants that would have a higher level of services.
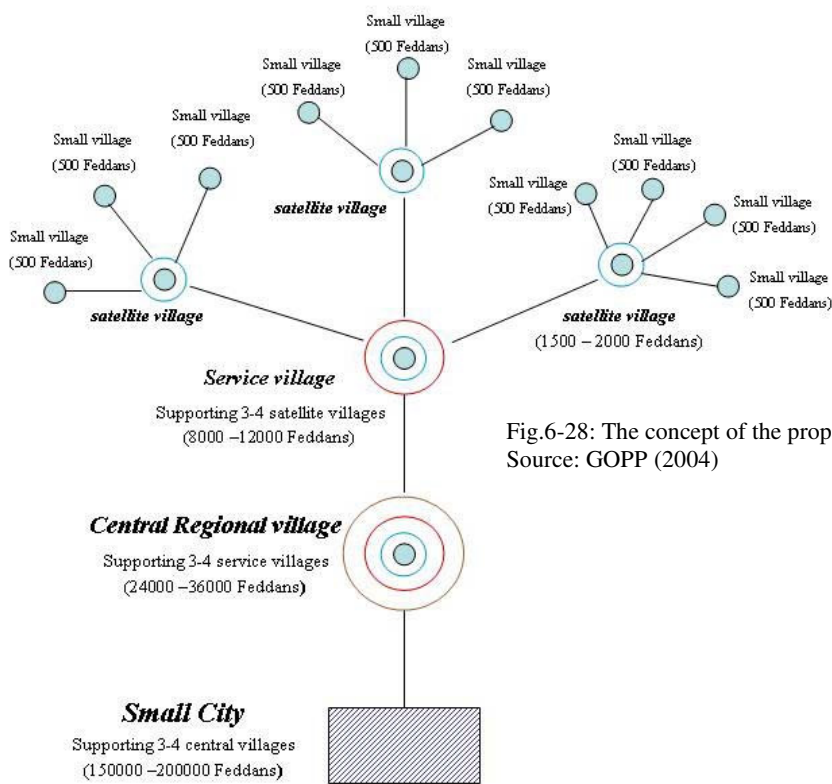
Fig.6-28: The concept of the proposed pattern
Source: GOPP (2004)

This general conceptual model was adapted to suit the local settings and used to come up with the proposed settlement pattern for the Frafra group. An initial structure was proposed by the consultant and his teamwork, which was discussed with the local council and some citizen groups and eventually modified to suit their requests. This was done taking into consideration the data supplied by the ministry of water resources in which the location of existing water wells and possible water wells were given; thus a final pattern was introduced.

Hence, three groups of settlements where organized: (service villages with service range of 10 to 17 Km) each having a lower grade of settlements (satellite Villages) supporting the numerous small villages, while the function of the central regional village was merged with the city of Frafra, since in terms of population the city is less in size than the regional village, as illustrated in figure (6-29).

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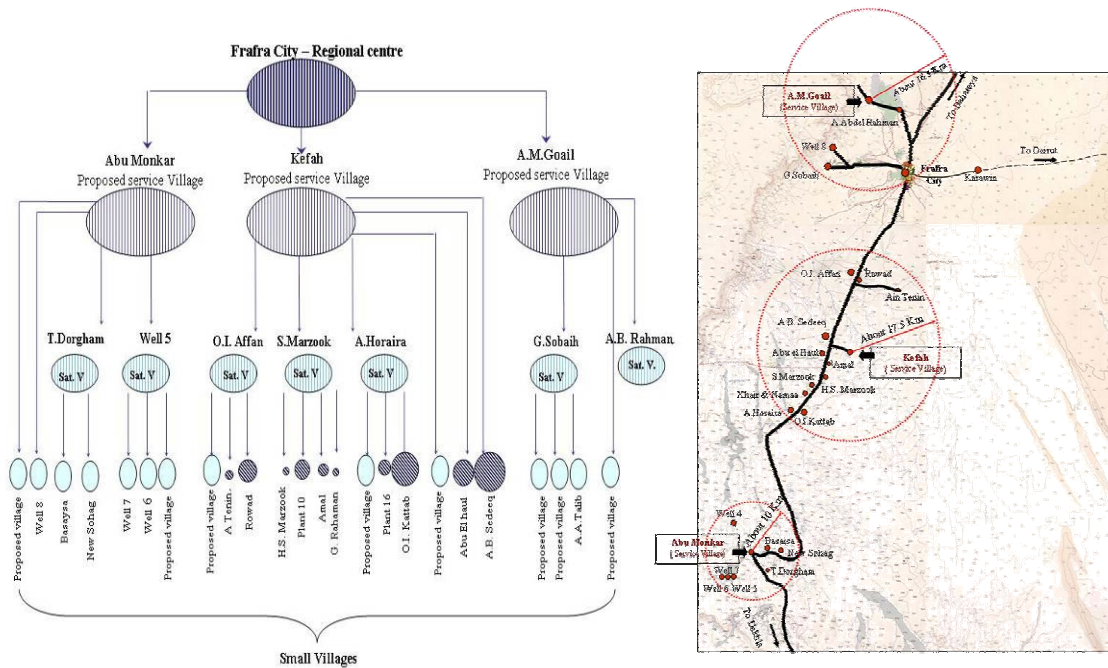
Fig.6-29: The final proposed pattern for settlements' pattern in the Frafra area (left) and the three main service villages with their showing their service coverage range

Source: GOPP (2004)

A structural plan for each of the three groups illustrated in the above diagrams was prepared applying the schematic rearrangement on the spatial settings; an example of this is given with the village of Abu Monkar in the diagram below.
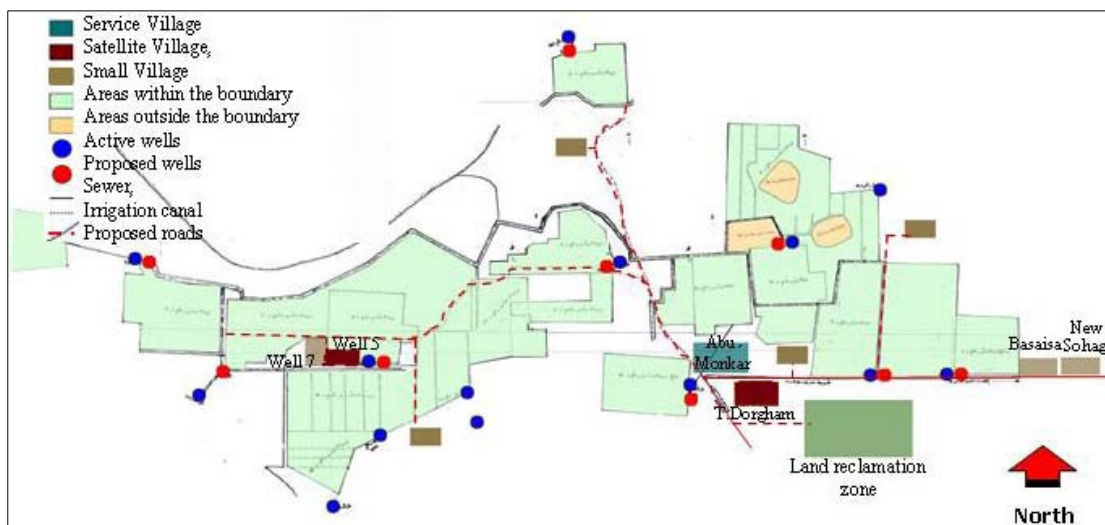
Fig.6-30: Structural plan for Abu Monkar that is based on the new proposed pattern of settlements in Frafra.

Source: GOPP (2004)

Reflections on the attempt

The project is still ongoing, which makes it difficult to make a good judgment on its outcome; however some remarks can be given at this moment, in the following manner:

- This attempt succeeded in a certain way in the capacity building of the GOPP cadres in relation to participatory planning. As declared in an interview with a top GOPP official, the organization is currently adopting the approaches of participatory and strategic planning to apply them in its forthcoming activities. At the same time the local citizen groups participated for the first time in an active planning process deflecting from the usual passive pattern that was dominant in most of the previous development attempts.

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- In terms of the proposed settlements' pattern, judging from the field studies, Frafra city is indeed characterised by a concentration of the main services, making the travel distance for basic services inadequate, especially with a shortage in transportation modes[111]. The proposed concept is very basic in itself, and could even be considered a rigid hierarchical tree structure, but it ameliorates the existing imbalance of service distribution in the area. Despite that the proposed service scheme covers the basic needs of the small villages, which are also covered by the nearby satellite villages, the distances between the large service villages and the lower rank villages can sometimes reach 15 km, which would need adequate transportation system to ensure the accessibility to their services or another modification to the proposed pattern.

- The government through the work of the consultant, started by building a village that represents one of the small villages suggested in the proposal. However, the outcome of this village was not successful. The village was built, assuming that the migrant farmers will move to this village. But when the village was visited during the field trip in 2006, it was still deserted. Some of the interviewed migrant farmers stated that the reason for this is that the price set to purchase a house in that village is not affordable to them with any further assistance from the government. Actually, the prices set for these houses are quite low if they are to be compared to the prices in Cairo, but they are not reasonable in a context like Frafra. The government in building this village and failing to populate it, repeats the failure of the new cities experience around Cairo with a lack of development management and sufficient studies of the financial capacities of the targeted population.

Fig.6-31: The demo project in the form of a planned settlement still deserted despite its completion.

- It is questionable to which extent will the proposed pattern be implemented, especially that the governor of the New Valley who was involved in the project was replaced by another who also swapped position last year to another governorate. It is therefore questionable whether this project will proceed despite the replacement of the governor or will it be forgotten like many previous plans that faced the same situation of changing provincial leadership, which is a problem facing the implementation of many plans as discussed in the previous chapter.

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[111] During the field visit in May 2006, it was noticed that there was no sufficient public transportation to and from the city to the different villages, though there were different private sector buses, their frequency was questionable, in many cases, people simply hitchhiked their ride to and from the city.

6-4-4 Lessons from the Frafra experience

Having reviewed the case of Frafra and the development attempts in it within the last decade, one could come out with the following lessons (or elements) that should be taken into consideration, when formulating a proper development strategy for the region and its settlements, these elements are:

− A total top-down approach in planning cannot achieve adequate results, which was the case in the physical planning for Frafra city, in which the local population was excluded from the planning process, and the informal development attempts which was causing an increase in the population outside the city were not taken into consideration, eventually the plan could not achieve most of its objectives. This calls for public participation in the planning process to at least know the needs of the people.

− The Informal development, done by the migrant farmers, has been successful in Frafra, which eventually was transformed into co-production with the local and provincial governments. This was done after the interventions of the migrant farmers managed to actually realize the national objectives, mainly reclaiming desert lands and relocating people away from the Nile Valley, because of their initial success the government was faced by an existing fact (the reclaimed lands) and had no choice but to bypass bureaucracy, and assist these groups of settlers in their attempts. It is argued that this could be an interesting approach in achieving specific objectives in the presence of a central government, simply by putting the government face to face with reality, which is backed up by a strong popular demand. Eventually the government is most likely to support the ongoing attempts and responding to any relevant demands.

− The proposed hierarchical pattern in Frafra is important in terms of ensuring service provision to all the settlements in Frafra and in regulating rural to urban and rural to rural relationships among the settlements. However, an adequate transportation system or another arrangements in the hierarchical system should be considered to respond to the large distances between some of its ranks. This approach could be adjusted to suit other groups of settlements in the case study region. It is argued that applying a hierarchical system for the provision of basic needs, can be accompanied by the creation of networks both on the regional level: between the five groups of settlements and on the very local levels, in terms of the three types of networks discussed in chapter three, driven by networking among actors in each group of settlements.

Another possible combination between networking and hierarchies is discussed later in chapter nine, in which the combination of networking between actors to realize and formulate future development visions in the region are argued to be combined with a hierarchical way of diffusing funds to implement the projects that realize the visions.

The direct intervention of the government in building the demo village was not successful. Many of the interviewed migrant farmers argued that should the government had focused directly on the provision of basic needs for the existing settlements and the improving of transportation facilities between the settlements and their services; it would have been a better investment. It is argued that the government should focus on the aspects of co-production with the local people to support them with necessary infrastructures and services, while acting as a regulating body for the development activities; these aspects are further discussed in chapter nine.

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6-5 Towards a different approach for development

This chapter has tackled the previous regional development interventions in the case study region that took place over the last forty years discussing their settings and the reasons for their outcomes. Development attempts on the sub-regional level were also tackled through the case of Frafra by focusing on the development interventions during the 1990s and 2000s and the lessons learned from these interventions.

The majority of the regional development plans were made in a top down way by the central , government, which in many cases did not have sufficient means, to fully implement the plans, or was taken by a crises when doing so e.g. the six days war. In many cases, the plans were over ambitious, especially in regards to agriculture, which all the plans heavily relied on as a solid economic base for development that would create a large number of job opportunities, unfortunately this was not always the case. However, these interventions succeeded in breaking the isolation of the region and linking it to the rest of the country. It had undeniable and visible spatial development interventions, which transformed several villages into cities and introduced many basic services that were lacking to the settlements of the region.

A change in the general approach took place in 2000 with the making of a strategic plan that covers the study region together with neighboring provinces from the south of Egypt, which together with its spin offs e.g. the intervention in Frafra, could be considered a good start for a change in the development approach, however, it is still not enough. Further involvement of the different actor groups is highly needed, by engaging them in a direct cooperation through a regional platform for development, while taking into consideration the possible existing regional assets. This should integrate with the experiences gained from Frafra, especially development by co-production, which showed the possibility of cooperation between local and provincial governments with the people to achieve rural development and taking into consideration the proposed hierarchical system for service provision that could be generalized over the other groups of settlements while taking into consideration, their contextual settings.

Accordingly, the use of other tools to support regional development and planning in this region should be reconsidered, taking into consideration the lessons learned from the previous regional development interventions for both their achievements and shortcomings, these tools are argued to be networking and networks, which have been used in other contexts as discussed in chapter three.
However, how can this approach be applied within the settings of this region, which is a remote, peripheral and desert region that differs from other regions in the world that applies them such as those discussed in chapter three?
Through the coming three chapters the proposal of using networking and networks is discussed and analyzed thoroughly. But in order to do so, it is important to know what the Egyptian academics, consultants and professionals think of the use of networking and networks. Based on their experience and familiarity with the previous regional development interventions, their opinions and contributions towards the possibilities and mechanisms of applying these tools are considered essential, therefore they are discussed thoroughly in the next chapter.

VII- Egyptian Perception of Using Networking and Networks in the Western Part of Egypt

7-1 Introduction

Before analyzing the case study region for existing relationships of regional cooperation that could be developed to regional networks, which is done in chapters eight and nine, it was important to examine the Egyptian perception towards the use of networks and networking as tools for regional planning and development. These concepts were never applied in the Egyptian context. This examination was done through the series of interviews that were held in September 2005, which included 15 academics/consultants and GOPP professionals, discussed earlier in chapter five (See annex 1 for a detailed description of the interviewees and annex 2 for the questions asked in the interviews).

To avoid ambiguity and confusion it is important to mention at this point the factors that affected the outcome of these interviews and the reactions discussed in this chapter:

- Most of the interviewees had some background on regional development theories; this background was stronger among academic/consultants more than the GOPP officials. This is because the formers are mostly professors of regional and urban planning at different Egyptian universities, while the later acquired their knowledge from their basic training and later training sessions at the GOPP.

- Almost none of the interviewees had any background on the concepts of networking and networks in the manner discussed in this thesis. As mentioned earlier the concepts are new to Egypt, except for one professor who did some research work in relation to new regionalism. Accordingly a brief explanation was given at the beginning of each interview on the idea of this research. In most cases especially among the academic/consultants they understood the issue as an attempt to achieve regional development through functional cooperation of complementing services and activities among the settlements of the region.

- As such, networking and networks were not distinguished from one another, rather both expressions were perceived as referring to functional and physical networks. It should also be mentioned that at the time of conducting these interviews, the theoretical background was not mature enough to distinguish between the two issues. Thus, what is presented in this chapter shows the reflections towards regional cooperation through functional and physical networks. Sometimes their reflections also included organizational and institutional settings, some of which reflected the relationship between the different government levels and other actors/organizations relevant to the development process.

It was of a great astonishment to find out that the majority of the interviewees, mainly the academic/consultants supported the idea using networks to achieve regional development in the study region, and even gave interesting insights on this issue. There were also some interviewees, mostly the GOPP officials, who rejected the idea from the beginning.

With several supporters for the idea, it was an opportunity to capitalize on their enthusiasm and seriously consider their insights owing to their substantial experience. Hence, they were invited to reflect on the proper activities that could be functionally integrated through networks and the success factors necessary for this intervention. These insights were considered during the field trip and investigation that took place in May 2006, when their validity was verified. Consequently with these verifications, the application of networking and networks in the study region is proposed in chapters eight and nine.

7-2 Rejection and acceptance of networks in the study region

Initially when the interviewees were asked whether networks could be applied in the study region and their reasons for rejecting or accepting this application; the majority of the interviewees reacted positively towards the idea, giving different reasons for its importance, while few denied the possibility of its use, substantiating their rejection with several arguments.

7-2-1 Rejecting the use of networks

Few of the interviewees rejected the idea of using networks as a tool for regional development in that peripheral region of Egypt. Eventually they came in line with some of the arguments discussed in chapter three that ruled out the possible use of networking and networks in developing countries. However they had other arguments for this rejection that are more related to the Egyptian and local contexts. These are reviewed as follows:

Waste of funds

An interviewed official of the GOPP, expressed that the application of such an approach in the study region would be a waste of funds, she based her opinion on the following reasons:

- All the groups of settlement have the same agricultural products e.g. olives and dates, accordingly it is not possible to start a cooperation and integration procedure with no diversity of products. Despite that the support services for the agricultural activity can be complementary and distributed over the different settlements; she did not take that into consideration when giving her assessment.
- She thinks that since the agricultural products of the region are different from those of the Nile Valley, it is more effective if these settlements would be linked horizontally with cities there to sell their products in their markets.
- The size of the population in the region, which is concerned with such an intervention, is relatively small, taking into consideration that functional networks should be supported by physical infrastructure, which requires large investments that is disproportionate with the population size. In that sense she overlooks the fact that there is already a road network in the region that is a base for initial intervention, with several roads under construction in many areas especially for horizontal linkage. Physical networks will indeed need investment, but there is a proper base to start from as seen in chapters eight and nine.

For these reasons, she argues that it would be more feasible and practical if the settlements in the study region would be developed separately. This aspect was discussed earlier in chapter four when discussing the development and urbanization map of Egypt (1998), which pursued a similar logic, hence, giving the region the least development priority based on the individual assessment of its settlements rather than treating it as one unit.

From the reaction of the interviewed official, it is evident that her perception of regional networks was solely directed towards commercial integration of agricultural products, and the principle of marketing these products within the different cities of the region. She did not take into consideration that regional networks have further aspects for cooperation more than a commercial network. The reflection of this GOPP official can be explained from the view that most of their career, GOPP officials were involved in typical land use planning; the regional dimension was in many cases absent.

Lack of implementation

One of the interviewed academics/consultants did not comment much on the idea of applying networking and networks in regional development; he was skeptic that no matter how the planning intervention is good, it will not be realized, as he is critically considering the previous regional development plans that were never implemented.

As discussed in chapter five, several regional development plans were not fully or totally implemented, which supports the concerns of the interviewee; this is taken into account when discussing the application of networking and networks later in this thesis.

7-2-2 Accepting the use of networks

The rest of the interviewees acknowledged the use of networking and networks as tools for regional development in the study region, and even some called it a necessity. They had several arguments and reasons with which they substantiated their position.

Pooling of resources is a better approach

Opposing to the argument of the GOPP official that the settlements of the region should be developed individually, two of the interviewed academics/consultants argue that the only way to achieve regional development in such a context is to regard the whole region as one unit while considering the resources and development potentialities within its settlements in relation to each other, in other words pooling the resources of the region.

As a matter of fact, this pooling allows the settlements of the region to solve the problem of regional disparities, which is an effect of networking and networks, discussed in chapter three. One of the above interviewees views the use of networking and networks to foster cooperation between the region's settlements, as a sustainable way for regional development. He argues that if each settlement is developed separately, its resources e.g. water and minerals would risk being exploited over a short time, since there would be a concentration of activities within each settlement based on these resources, while this pace of exploitation would be slower if all settlements are cooperating together.

Social equity

Another interviewed academic/consultant argues that through establishing relationships of cooperation for development between the region's settlements, a social key issue would be positively tackled. He drags the attention to the fact that the society there is based relatively on the tribal system. As such, if investments and development are concentrated at a certain settlement it would mean that this group of people is favored over others by the national government. However, if development attempts and investments are spread over all settlements while working together for development, this cooperation would lead to stronger relationships based on a sense of equity and sharing responsibility. The latest has been discussed in chapter three as one of the effects of networking and networks, that is through sharing possible risks, uncertainties concerning the development attempts are reduced. This also helps in building trust between the people of the region, which as discussed in chapter three is an important success factor of networking and networks.

Despite that the tribal dimension was not sensed in the last field trip to the region in 2006, it was sensed in an earlier trip in 2001. It was obvious that the inhabitants of Bahareya envied those of Frafra and other settlements in general because of the economic recess that they faced at that time and the lack of funds and investments that they received from their provincial government. This is understandable in the case of Bahareya as it does not belong to the same province as the other settlements, rather a peripheral group of settlements attached to Giza.

Promoting regional competitiveness

An interviewed consultant/academic acknowledges that applying networks in such a context would promote and allow competitiveness. He assumes that if there is a settlement in the region that possesses a competitive element with which it can compete nationally or even globally, it cannot do that in a hierarchical system as it is directly dependent administratively on higher settlements, which does not give it sufficient autonomy to have a competitive role. However, should networks be considered, it is very possible to compete, because within a region the settlements can complement each other to provide the necessary elements for regional competition. These ideas reflect an inclination towards the concept of new regionalism discussed in chapter two, as a matter of fact, this academic/consultant had done research papers on the concept of new regionalism, which is reflected in his way of thinking.

Realizing the New Map for Egypt

An interviewed consultant / academic argues that establishing regional networks in the region, which as discussed earlier increases regional competitiveness, might as well create incentives that would attract more people from the Nile Valley to the region, hence reinforcing the development axis passing through this region which is part of the New Map policy that was discussed in chapter four. This comes inline with one of the effects of networking discussed in chapter three, which is the spatial diffusion of development, and not the concentration in one location, which is the willed situation in the Western part of Egypt.

Another interviewed academic/consultant regards the possibility of introducing new settlements into the existing settlement system. These settlements are to be located next to the unused resources, to be incorporated within the intended networks of cooperation within the region, in a way to complement each other, eventually introducing further incentives to attract people to the region. This shows that the idea of constructing new settlements as an approach to achieve development is still somehow dominating, even among some academics, however, among the main stream academics this idea is considered case sensitive, as it is considered by many as an unsuccessful approach for regional development due to the past experiences of that were discussed in chapter four.

In General, the majority of the interviewees acknowledged that establishing networks in the study region is not an objective in itself; it is rather a tool to achieve regional development. One of the interviewed GOPP officials showed how he views regional networks by saying:

"... Regional development focuses on increasing the national production and the national income and how this is reflected on the welfare of the citizens; if establishing regional networks succeed in doing so then it's a tool for that increase..."

This statement reflects what this research is about, applying networking and networks is not regarded as an aim in itself, it is rather a tool to achieve the aim, however, the main question that this research tries to answer is how to use this tool within the Egyptian context and whether it is appropriate for it or not.

7-3 Sectors of activities for functional networks

As mentioned in the introduction of this chapter, when the interviews were held in 2005, the perception of the interviewees was focused on regional functional networks that are based on collaboration between the region's settlements. Owing to the fact that many of the interviewees have a good knowledge and experience with the study region, they were asked to identify possible sectors of activities that could be incorporated in regional networks.

Going back to the proposed framework of analysis presented in chapter three, the functional networks are considered the second layer in the framework, between the actor and physical networks. Most of the reflections were mainly on the activities upon which this layer is to be set. Several interviewed consultants/academics acknowledged that such sectors of activities should stem from the assets of the region focusing on an endogenous development approach, rather than being imposed by external agents namely the central government.

These assets could be based on its cultural heritage, on the spatial quality and the special characteristics of the traditional built up environment, among other assets. This opinion coincides with that of Friedmann (2006), discussed in chapter three, who views the assets of a region as an important factor for its development.

An interviewed academic/consultant had previously carried out several planning and research projects in the region, she mentions that there is already a kind of integration binding some sectors of activities together; which are important to consider and capitalize on to establish a coherent regional cooperation.

She drew the attention to the fact that in some cities of the region, especially between Dakhla and Kharga, there is a *home-work* relationship where people living in Dakhla go and work in Kharga, hence, the concept of integration within the region would not be an imposed one[112].

Some sectors of activities were suggested to be incorporated in the formation of the foreseen functional networks that are discussed in chapters eight and nine, the three main sectors of activities suggested are tourism, agriculture and education; these sectors were supported by the majority of the academics/ consultants, while others proposed different activities.

7-3-1 Tourism

Several interviewees point to tourism as a possible activity sector, one of them argues that there is already some cooperation in the tourism sector taking place in the region.

She gives the example of several tourism sites advertised in Dakhla and Kharga and they could be in either of them. Handicraft centers, spas and safari camps are already located along different parts of the route between the two oases and supporting the tourism sector in both,

 Another example is seen between Bahareya and Frafra, where tourist services in one supports the other, and used as a base for tourist activities covering the two, therefore, there is an existing cooperation between the people working in tourism in these settlements.

Another interviewed academic/consultant agrees that tourism is a prominent regional opportunity based on the existing cultural, spatial and natural assets of the region, yet he thinks that there should be more sufficient cooperation between the actors involved in this sector to further develop it.

7-3-2 Agriculture

Agriculture was referred to by almost all interviewees but in a very cautious way.

The interviewed academics/consultants realized from the previous development attempts in the region, which focused on agriculture and rural development that such a concentration on one sector of activities failed in achieving many objectives of the development attempts, as discussed in chapter six. Therefore they think that this sector should be considered within multiple economic activities and not being the only one. This was evident in the reaction of one of the interviewed academics/consultants, which demises that all the previous attempts for development in the region were based on agriculture.

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[112] This academic/consultant is Prof. Shafak EL Wakil she conducted two research projects on the oases of the Western Desert, in 1996 and 2000, tackling the development potentialities and the existing sectors of activities that could be involved in regional development. She was also the consultant in charge of setting the structural plan for the city of Kharga in 2003.

He thinks that any other activity that is not related to agriculture could be introduced in the region, mainly because of the uncertainty towards the existing water resources, which is the basic need for the agriculture sector.

In contrast to the cautious reaction illustrated by the academics/ consultants, an interviewed key official of the GOPP thinks that the major sector in the study region is "definitely" agriculture, with a lot of supporting activities, e.g. administration, transportation and maintenance. He supports his argument with the Toshka project that is close to the area of study, discussed in chapter four, since some agricultural products are exported directly abroad (to Europe and the Gulf States) eventually air freight is considered an important activity that is a spin off from agriculture. It should be taken into consideration that the Toshka project, which is based on establishing new rural communities in the south west of Egypt that are supplied by water via a canal from the Nile, is causing a lot of controversies; hence, using it to substantiate the above argument is rather questionable. Nevertheless the stance of the GOPP official is understandable since he is advocating the line of his organization, which for several decades focused on agriculture as the main activity for regional development in the region.

However, one of the interviewed academics/ consultants, agree with the GOPP official's argument that activities related to agriculture should be developed as well, these could be agro industries and other supporting activities for the agriculture sector.

7-3-3 Higher education

Higher education is considered by many interviewees as a possible sector that could form a regional functional network. One of the interviewed academics/consultants states that there are limited higher education facilities in the study region. She mentions that there is a strong link seen between the settlements of the region and Asuit city in the Nile valley, where most of the university students from the oases seek their higher education in Asuit University.
Accordingly, if a university is established to serve the regional demand instead of heading to neighboring regions, it could be considered a regional activity. However, this point of view is questioned by some academics as the percentage of the population seeking higher education is not sufficient to establish a university.
In that sense, perhaps the consideration of other educational institutions including technical schools could be more adequate to the region in terms of its needs and numbers of education seekers.

7-3-4 Other sectors of activities

Some other activities where also suggested by some interviewees, though they were not widely supported by others :
- Web based activities such as e-commerce and software development should be considered. This view is shared by two of the interviewed academics/ consultants and the key GOPP official who argue that this require limited intervention in relation to infrastructure, that can already build on the existing communication networks, similar to the manner discussed in chapter three in the debate on the effectiveness of ICTs in regional development. They stress that in this case human resources and human knowledge are most needed, in fact capitalizing on human and intellectual assets .
However, this view should be tackled carefully, because there are no research or higher education institutions in this area to train qualified cadres, unless the aim is to invite those cadres from else where in Egypt, which at the moment sounds rather difficult to achieve.

- Mining is also considered as an important sector in the region, not only because of the existing mining activities, but also with the possibility of initiating studying and exploration

attempts to locate possible minerals including oil as pointed out by one of the interviewed academics / consultants.

It is clear that the sectors of activities proposed above are not only representing sectorial and functional dimensions but they are directly linked to spatial components that represent the assets and qualities of the places/space of the region, which could be used for its development. These spatial assets are quiet evident in terms of ancient monuments, special types of human settlements and the nature of the desert, when it comes to a sector like tourism. In agriculture spatial assets are also evident in the cultivated areas of the oases, the irrigation canals and lakes in the desert, which are of a unique spatial image.

The main sectors suggested by the interviewees are tackled among the study of the next chapter to explore their opportunities and possibilities in the development of the region based on its assets through the use of networking and networks.

7-4 Success factors and conditions required for applying networking and networks in the study region

The interviewees were asked to identify from their point of view the important success factors and conditions that are required to establish networks in the study region. They responded by mentioning general conditions, and more specific factors in regards to administrative and institutional matters that should be fulfilled to create a proper medium for such application. Some of these factors resemble the success factors for networking and networks discussed in chapter three, while others are more context oriented.

7-4-1 General conditions

The general conditions discussed by the interviewees mainly focused on the accessibility factor, the importance of involving the local population and their emphasis on the importance of making the regional incentives well known to enhance its attractiveness.

Accessibility

The majority of the interviewees agreed that the existence of a proper physical network in terms of infrastructure and transportation modes is a very important prerequisite that would ensure the accessibility and linkage between the different cities in the region and to other regions as well. One of the interviewed academics/consultants argues that even the large distances between the cities of the region could be overcome either by sufficient road networks and transportation modes or even by small airports, to ensure proper accessibility, which as substantiated by another interviewee would be of a good incentive for investors and stakeholders to get involved in this region.

This aspect was emphasized in chapter three, in which physical networks are not only considered as a prerequisite for regional networks, but they are considered the third layer for the framework of analysis of regional networks, which can be visibly detected on the ground.

As such, what should be done is to examine the existing physical networks and the available transportation modes and identify the missing links in this network and eventually establishing them; this investigation is carried out in chapter eight.

Involving people

Involving local citizens is considered by many interviewed consultants/academics as a necessary factor when setting the plans for any regional development attempt including those supported by regional networks. They stress the importance of working with the local

population to identify the key issues that should be tackled by the regional development attempts, and to set a future vision for the region.

This already shows the shift in the position of planners as they adopt the concept of public participation in their plans , discussed in chapter five, they acknowledge that for any plan to be implemented the public should be a supporting partner in its making.

This coincides with some of the success factors discussed in chapter three, mainly the gathering of all involved actors and the importance of gaining public support. These are considered mainly essential for the establishment of actor networks, which are the key to establishing functional and physical networks. However, what the interviewees had in mind was a bit different, as they stressed on public participation, but not to form an actor network as the top layer of the regional networks, according to the framework of analysis, but to identify key aspects to be considered in the functional networks; the role is quite close, but the way it is proposed differs.

Another academic/consultant argues that after taking into consideration the key issues raised by local actors, a general framework should be formulated to meet these issues. She adds that planning in this situation should be combined: from above and from below.

This is because many of the involved actors in such development attempts are only looking to tangible interests that are confined to their local places. In many cases local actors and even local and provincial officials are not equipped with the proper capacity to participate in a regional plan making, as discussed in chapter five. In that sense planning from above means to provide an over all regional structure that takes into consideration the main key issues of the different settlements and combine them together on the regional level, and from below by locally identifying these key issues of each group of settlements through public participation.

Marketing the region

This factor was mentioned by some interviewed academics/consultants, who meant by marketing the region making the regional incentives and potentialities well known among the different stakeholders and possible investors, in other words to emphasize the attracting incentives of the region. They also refer to the importance of spreading awareness on the benefits of regional networks among key actors including local and provincial government officials so as to gain support for applying them as a tool for regional development in the study region.

 In addition, some of the interviewees agree that the assets of the region should gain publicity among not only the regional but also the Egyptian and the wider international public.

For example few people, including Egyptians, are informed about the cultural heritage and the ancient monuments that spread across this region. The general notion among most Egyptians is that this region is still living in the *"camel age"*, as discussed in chapter one, while in fact, the settlements there have the same features of middle sized Egyptian cities.

 Hence, as argued by the interviewed academics/consultants, sufficient publicity and info sessions should be organized for the general public, the involved stakeholders and possible investors, to know the assets and the potentials of the region.

This aspect coincides with the concept of building a regional image or a metaphor discussed in chapter three to make a region attractive for investment and development to different actors and stakeholders.

7-4-2 Administrative and institutional conditions

In addition to these conditions and actions defined by the interviewees, the interviewed academics/consultants also defined more specific conditions that could be classified as administrative and institutional conditions.

Identifying Relationships

One of the interviewed academics / consultants states that it is important to identify the types of functional relationships between the settlements of the region with those of the Nile valley, to know what are the existing links and relationships that could be further developed into functional networks.

Another interviewed academic/ consultant reflects on the importance of identifying the existing organizational/institutional vertical and horizontal relationships. With vertical he refers to the relationship with the state and its hierarchical system and with the horizontal, the relationships between the region's settlements region and those of neighboring regions.

The idea of combining hierarchical relationships with networking is emphasized by one of the interviewed academics/consultants who argued that service provision can be regulated through the existing hierarchical system while networks could be established at the same time to foster cooperation and regional development among the settlements of the region. This aspect was discussed in chapter six, through the intervention in Frafra, and the proposed settlements system that would ensure service provision through the hierarchical system, where it was argued that this could be in fact combined with establishing networks to achieve regional development.

Defining sub-regions

An interviewed academic/consultant argues that there should be a defined spatial area in which regional networks would take place; the definition could be geographic, contextual or administrative. In the case study region the spatial area is clear from the geographic and contextual aspects, since all the settlements are oases surrounded by desert and they all have close contextual and cultural settings and characteristics.

A further elaboration regarding this idea is illustrated by another academic/consultant who suggests dividing the region into smaller sub regions that could be developed easier. Some of these subdivisions would have no settlements, yet, perhaps in the future when the region becomes attractive, further settlements could be introduced depending on the demand and not speculating that people would come. The idea of defining regional borders and sub development zones was discussed earlier as part of the regional development plan of 1996, discussed in chapter six, which also made the emphasis on including Bahareya with the other settlements in one province.

Decentralization

Many of the interviewees acknowledged the importance of decentralization as a success factor for establishing networks. It is seen both in terms of decision making and in terms of allocating the necessary funds for the development process.

An interviewed academic/consultant argues that decisions should be made on the level of local governments and councils. She expects that the full transformation from a central to a decentralized system would be done within the next 10 years; taking into consideration that the people are becoming more aware of their rights and capacities, with the help of global media that they access through the internet and satellite channels.

As discussed in chapter three, decentralization should be present within the national system to allow for the participation of the different levels of the government in the networks; at the same time decentralization helps in realizing the principle of subsidarity, which is necessary for establishing efficient actor networks.

The second aspect of decentralization is discussed by two other interviewees, who consider fiscal decentralization and the capacity of securing local funds an important and necessary

aspect for the development process rather than totally depending on the funds allocated from the central government. They take into consideration the problem of shortage in central funding and the shortcomings in realizing the previous regional development plans, which were discussed in chapter five.

Finally another interviewed academic/consultant stresses on the importance of ensuring that revenues made by the region are spent in the region for its people, instead of being exploited as is the case currently. With these revenues spend in the region, its services and standard of living could be enhanced, hence acquiring further regional assets making the region attractive to other people to live and work there.

Lack of funding was an evident reason for the failure of many regional development plans; this fact is well known to almost all the planners in Egypt.

The interviewed academics/consultants acknowledge the transformation in the planning system, they argue that this will allow them to secure funding to implement key strategic projects that would realize future plans targeting regional development that could rely on using networking and networks as well(see annex 5 on preparing a structure plan in Egypt).

Cooperation and coordination

In terms of development attempts, regardless the approach on which they rely on, almost all the interviewees agreed that what is lacking and therefore would affect the possible application of networks, is the cooperation and coordination between the different bodies involved in the development process including governmental bodies.

An interviewed academic/consultants states that most of the governmental bodies consider coordination with other bodies as unwanted interference within their own scope of work, hence they avoid it. This lack of coordination would result in issuing conflicting decisions from different institutions which usually leads to the crumbling of development attempts, as argued by another academic/consultant. He therefore argues together with another interviewee in favor of the necessity of forming a regional committee to coordinate between the different regional and governmental bodies that could be involved in a development process based on networking. This committee would have the autonomy to suggest projects, mediating between the different stakeholders and be self financed. However, it should take into consideration the national interests and may be monitored by the government in order to avoid conflicting interests, where the decisions of this committee are to be respected and implemented.

However, as discussed earlier in chapter five, there are laws that regulate the process of regional development and attribute power to the local and executive councils in different regions. In addition to the presence of regional planning and development committees to coordinate between the different provinces in each planning region. However, these legislations are dormant. Therefore an interviewed academic/consultant, who is familiar with these laws, stresses on the necessity of activating these committees and implementing their decisions.

The idea of coordination was discussed earlier in chapter three, where it was argued that regional networks, the reference here was to regional actor networks, can achieve a good coordination of strategies in such a way to get the innovative ideas off the ground and produce projects to implement these strategies. However, there was also a warning on the type of relationship between the central government and other actors. The central government might consider itself superior, since it is the main source of funding, and look to other actors in the regional networks not as equals but as local sources for the coordination process, thus giving a top-down approach to the development process. But if the government agencies are flexible, then the relationship with other actors and organizations will be of collaboration and cooperation.

The challenge in the Egyptian context is to direct the relationship between the government and other actors and organizations towards collaboration. Even if the regulating laws are activated they should be revised to ensure that there will be a level of cooperation and collaboration, of course the government will still consider itself superior, as it takes time to change this attitude, but at least it will not be absolutely dominant.

Administrative reform
In addition to coordination between the different institutions and governmental bodies, administrative reform was considered necessary by several interviewees.
Two of the interviewed consultants suggest that the current administrative system in Egypt is characterized by its sluggish bureaucracy and difficult red tape procedures that hinder development; therefore it should be reformed, but not totally replaced. On the contrary the presence of this massive administrative structure should not be ignored with all its driving forces. However, it requires crucial modifications of its structure, to allow it to coop with the shift towards decentralization and consequently, the possibility to host innovative development approaches such as the use of networking and networks in regional development. As argued in chapter three, networking has to be combined with the hierarchical system, while stressing on the aspect of governance and taking into account informal policies to achieve regional development, a concept that is further explored in chapter nine.
One of the two interviewees calls for changing the culture of the staff working in the administrative system to orient them towards a horizontal approach (networking) rather than the vertical hierarchical system they are used to.

Another interviewed academic/consultant refers to the necessity of having a system that is geared towards development management rather than the one already existing and is purely administrative based on routine matters like issuing permits and fines. Accordingly, there should be trained staff that is equipped to handle development management with a capability of organizing development phases for any intervention, and not to focus their activity in issuing permits and penalties. As discussed in chapter five, one of the main reasons for the failure of many new cities was the lack of development management. There is also the problem of the lack of trained staff, which is also found within the regional bodies of the GOPP as discussed in chapter five, a problem that requires proper intervention.

7-5 National links or Global links

In case different regional networks could be formed; should this region be linked to the national economy through the cities of the Nile Valley or should it be linked to regions and places anywhere around the globe? Despite that the whole idea of networking simply means working and doing things together in a cooperative way, some of the interviewees had different opinions when it came to national or global cooperation. It was interesting to receive the reactions on this question from the interviewed consultants/academics, as they were divided between supporting the national linkage on one hand and supporting the global one on the other, with a third group that called for both types of linkages.

7-5-1 Establishing national links
Several opinions called for reinforcing the national links, hence enhancing both the regional and national economy. An interviewee argues that it is necessary for the sectors of activities in the region to be linked with national economy, as they cannot attract investments on there own. He argues that to ensure this linkage, the settlements of the region should be linked

physically with cities and ports in other regions in Egypt, but through a careful approach in order not to transfer the major drawbacks and problems of the national economic system to the region.

Accordingly, it could be argued that this national linkage would present advantages to the study region; despite that the regional context is different from other regions in Egypt, the national identity and the sense of belonging to one nation are the same, which would support the cooperation between the cities of this region and other cities in Egypt.

Another academic has the same preference, as she thinks that this linkage would help in integrating national sectors of activities and economy. She is cautious about establishing global links mainly because of the possible negative effects of globalization that can disrupt the character of the place, specially that this region is considered by many as a "virgin" area that does not have the negative characteristics of the congested Nile Valley.

An interviewed GOPP official agrees on linking the region physically with other places in Egypt, but mainly the corresponding transverse cities in the Nile Valley. She argues that this will ensure the presence of *markets* that would intake the products of the cities in the region, while at the same time give them access to regional labor markets where there are *willing labor forces* that would go and work in the study region. She sustains her argument with the case of the migrant farmers to Frafra, and another case of construction workers coming from the South of the Nile Valley and operating in the region.

Referring back to the discussion in chapter three, the above aspect corresponds to one effect of networking and networks, which is the pooling of resources including labor markets, in some cases shortage of labor in one place can be met by labor from another, and vise versa in terms of job opportunities.

As revealed in the next chapter, there are already existing relations between the cities of the study region and other cities in the Nile Valley, which could be further developed, to form possible regional networks.

7-5-2 Establishing global links

The second opinion calls for direct global interaction, mainly because of the following reasons expressed by some of the interviewees:

- It is important to separate the economy of the region from the national economy, ***to avoid inheriting the problems and drawbacks of the national system***.

- By looking to ***the global dimension, the potentials*** for the region would increase, especially with the current discussions on extending a continental road from North to South Africa starting from Egypt and the possibilities of entering the depth of the African markets on the continental scale.

- This region is better off separated from the Nile Valley, a striking statement, which is based on the argument that the Nile valley is a totally contaminated medium, from many aspects, environmental contamination, pollution, cultural contamination and the abusive approach of dealing with natural resources.

At the same time, the competitive advantage of this region is in its "purity and virginity", this in fact is considered one of the most important regional assets. Accordingly, the academic/consultant who made this argument strongly recommends separating the study region from the Nile valley. He argues that even if people migrate from the Nile valley to the study region, they should be culturally and socially prepared for the differences between the two places. He thinks it is better to separate this region and enhance its ***competitive advantages on the global scale***, by capitalizing on the special products that are highly

demanded in the international markets, giving the example of the "BIO" agricultural products that are being exported to Europe already from the Toshka project on competitive prices (once more the Toshka example should be dealt with carefully).

This view is also shared by one of the GOPP officials who considers that economic relationships between the case study region and other regions in the world are important. He refers to the same example given above where BIO products are exported to Europe and the Gulf, while machinery is imported from Europe.

It is argued, that in some activity sectors the main relation is with global regions, evidently in the case of tourism which is already the case in the well known touristic regions of Egypt.

7-5-3 Establishing both links

Several opinions argue that these links should be on both national and global levels, in order to achieve the needed competitive factors to enter the global competition.

An interviewed academic/consultant argues that this cooperation could be in the form of transportation services provided by facilities in other cities, i.e. using their airports or ports.

She also refers to the fact that it also depends on the will of the stakeholders and investors, to link the region directly to the global market, which serves indirectly the national economy as it provides employment, revenues from services and other benefits.

It is argued that both links cannot be ignored, assuming that there are different networks in the study region, perhaps some of them would only need to have links on the national level, while, others would need both types of links, taking into account the case of tourism, should a tourism network be established it would need both types of links, global for the tourist markets and local for supporting services and facilities.

7-6 A Defined analysis and study

The outcome of this chapter is of a great importance because of its influence on the line of the study. On the one hand it confirmed the acceptance of the idea of applying networking and networks as tools for regional development and planning within the academic and professional domains of urban and regional planning in Egypt. On the other hand it accumulated and articulated important insights and ideas that will affect the introduction of this concept in the study region. This helped in defining the next phase of the study that analyzes and investigates the region's current situation and identifies the possible approach for intervening in it.

The reasons given by the academics and professionals for their acknowledgment on the application of networking and networks in the study region included several aspects that coincided with the reasoning for their application in chapter three. These included the promotion of regional competitiveness, the effects of pooling of resources and alleviating regional inequalities, and achieving a spatial diffusion of development among others. This proves that similar reasons for the use of networking and networks in regional development exist in developing & developed regions, at least in the case of Egypt.

At the same time the reasons for rejecting the idea reflect the common drawbacks in the Egyptian system and the narrow background of some of the involved officials in the planning process as discussed earlier in chapter five.

The outcome of the interviews also highlighted the relevant sectors of activities that exist in the study region which could possibly be the base of regional functional networks. These sectors included tourism, agriculture and education. Accordingly they are studied and analyzed in the next chapter so as to track the existing relationships in the region in relation to these sectors of activities and whether these relationships could be promoted to networks.

However, the interviewees stressed on some conditions and success factors that included: the existence of proper physical infrastructure of accessibility in the region, the involvement of all relevant actors, and the importance of marketing the region.

They also stressed on other organizational and institutional factors including the definition of relationships among the related actors and bodies in the development process, the importance of a decentralized system in which cooperation and coordination between its bodies are of the main characteristics, in addition to the importance of defining the spatial area for the region of intervention and dividing it into sub-regions for an easier development management.

Consequently, the next chapters investigates what exists and what is missing of these factors, and propose how to introduce the missing ones within the proposal for applying networking and networks in chapter nine.

Accordingly, the next chapter aims to investigate in depth the existing sectors of activities, the relationships that exist within the region based on these sectors and to verify the existing and missing conditions for applying networking and setting functional networks, to capitalize on what exists and fulfill what is missing to reach for a proper proposal.

VIII- Existing relationships, Spatial Potentials and Assets in the Study Region

8-1 Introduction

The aim of this chapter is to study the existing relationships among the settlements of the study region, and to identify regional assets and opportunities that could be used in a regional development scheme. Studying the sectors of activities in the region together with the relationships that they generate among its settlements is then carried out to investigate the possibilities of establishing regional networks related to them. These sectors are tourism, agriculture, education and mining, which are the ones suggested by the interviewed academics/consultants in the previous chapter. However, the potentialities of these sectors of activities are directly related with the spatial assets, potentialities and spatial relationships within the region and its settlements, which affect each of them. Therefore the study carried out here, is done from the viewpoint of the spatial dimension and settings of the region.

To do so, the chapter is divided into two parts:

The first part discusses the regional relationships in general. It starts from the argument that within the regional space two sets of relationships are manifested, physical/spatial and social relationships. These sets also identify and influence the development assets of the region, which are tackled from the point of view of Friedman (2006), discussed in chapter three.

The second part focuses mainly on the four sectors of activities mentioned earlier, and the relationships within the settlements of the region related to them. The aim is to find out which of these existing relationships could be further developed to establish a regional network. To carry out this study, the three layered framework of analysis (actor, functional and physical networks), proposed in chapter three, is used and is supported by a SWOT analysis and an actor analysis for each of the sectors tackled.

The analysis done in this chapter heavily relies on the observations of the field visits in particular the one in spring 2006, and the interviews conducted with different city officials during the same trip.

Part I: Regional relationships in general

The analysis done in this part examines the study region for similar characteristics, and relationships that link its settlements together. It is argued that relationships within the regional space could be divided into sets, a physical set that is directly tangible, a social set that is non material but can have physical manifestation and a third set that combines both physical and social dimensions, in the form of activities, which is discussed in the second part of the chapter. The elements of the sets are given as follows:

- The physical set contains two categories: natural elements and the built environment, which is composed of three sub-categories: human settlements, infrastructure and utilities.
- The social set contains three categories: human and cultural relationships, social services e.g. health and education, and administrative relationships.
- The activities, which are based on physical opportunities and assets but are managed through social relations and interactions.

As mentioned earlier, this is done while identifying the regional assets that could be used in the development of the region according to the seven clusters of assets classified by Friedman (2006), but with adding to them the cluster of spatial assets. Figure (8-1) shows the relationships between these sets and the regional space and the relationships between the clusters of assets and the categories within the different sets, as considered in this analysis.
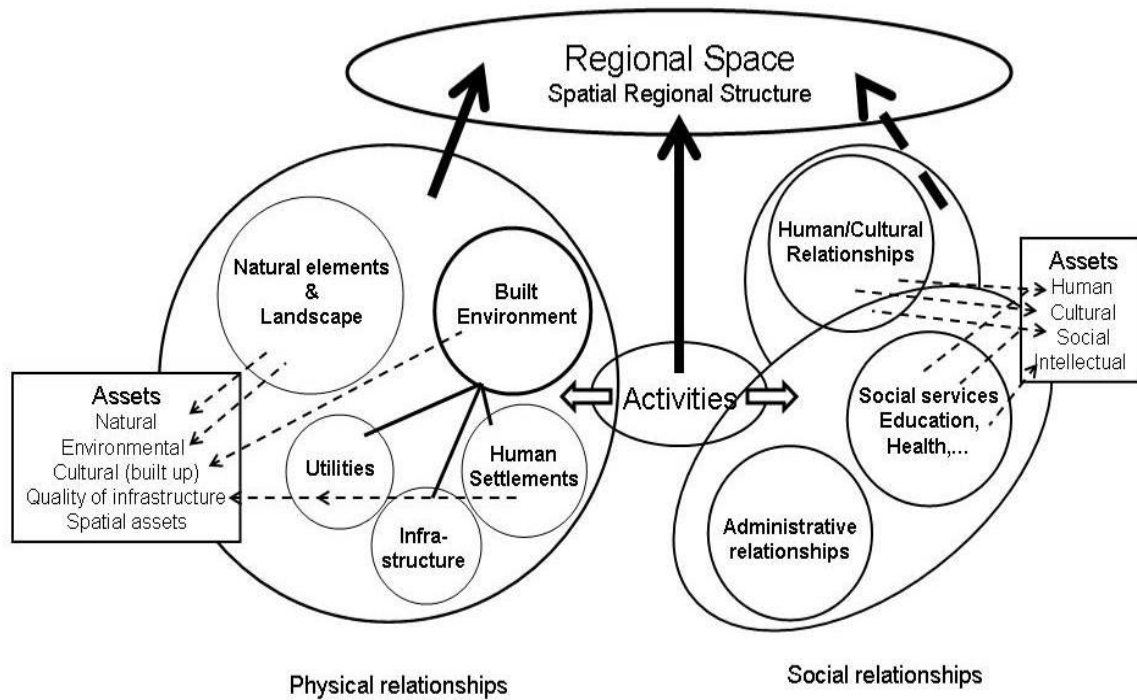
Fig. 8-1: Schematic representation of the relationships in the study region
Source: adapted by the author

8-2 Regional spatial structure

Since regional space is the main container to all the above elements and relationships, a representation of the regional spatial structure would facilitate their understanding.

The idea of a spatial structure here is about relationships between the structuring elements of the region. It identifies the relationships between the desert settlements and: each other, the Nile Valley and Cairo, and the desert.

The structuring elements of the study region are categorized as follows:

1- Natural structuring elements:
  - The Western desert plateau
  - The series of valleys where the oases are located in the plateau, and are considered a natural binding element.
  - Mountains close to the oases

2- Man made structuring elements:
  - The capital cities of the oases
  - The villages and cultivated areas
  - The regional roads that link the settlements of the region together
  - The regional airports
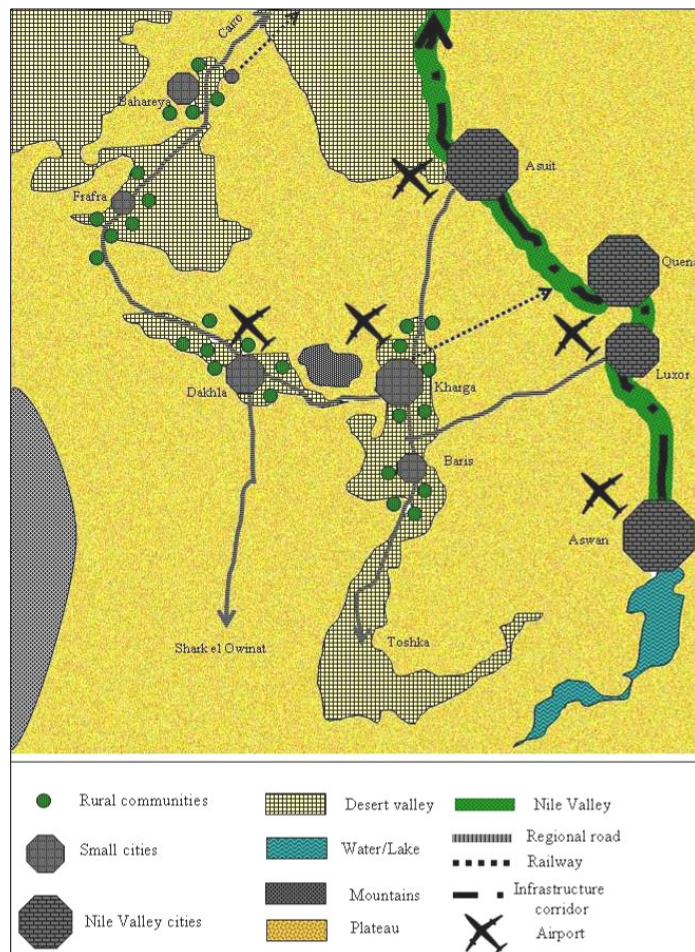
Fig. 8-2: Spatial Structure of the case study region
Source: adapted by the author

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- The railways linking parts of the region to the Nile Valley

It is important to note that the hot arid desert climate is considered a common element in the region. It caused the evolution of similarities and relationships in terms of the architecture and characteristics of the desert settlements, which used similar architectural solutions to accommodate with the regional climate.

At the same time, because of the relationships with the Nile Valley, it is important to take into consideration some of its structuring elements, which include the green Nile Valley, it main cities related to the study region, the Nile and Lake Nasser, airports, railways and regional roads that are leading to the valley. Of course there are many structuring elements that should be considered on each single group of settlements; however, the concern here is to give a general look on the region, to be able to situate the categories of the relationship sets within it. Nevertheless, when discussing each of these categories, more detailed analysis is given.

8-3 Physical relationships

The physical set of relationships in the study region, is composed of two categories, the situation of each reflects on one or more clusters of assets as illustrated in figure (8-2). These categories are:

- Natural elements, such as topographic features, desert and water, in other words the natural structuring elements of the region.
- The built environment, which includes the sub-categories of:
    − Human settlements that refers to similarities in terms of settlements' patterns, fabrics and architecture.
    − Utilities and basic daily services within human settlements, which include networks of electricity, telephones, etc
    − Infrastructure, which refers here to accessibility and transportation infrastructures that include road networks, railways and airports, which are the physical links and the means of accessibility to and in the region.

These categories are discussed in a bit of detail in the following sections.

8-3-1 Natural elements

Among the natural elements that contribute to the spatial structure of the region are topography e.g. plateau, valleys, etc and desert. These two are the main natural physical binding elements in the region. Another element whose mode of presence is a common characteristic in all settlements is water. These elements are discussed as follows.

Topographical elements

The locations of the groups of settlements in the study area vary from 200 to 400 Km to the west of the Nile. They are located within a series of valleys, of altitudes up to 200 meters above sea level, which are engraved through the Western desert Plateau about 200 to 500 meters above sea level (GOPP,1998).
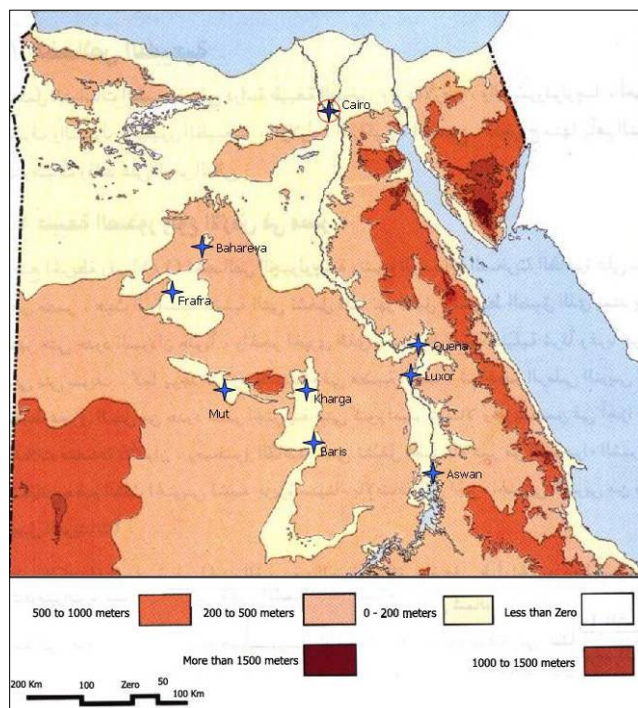
Fig. 8-3: The oases are located within a series of valleys that extend from South to North to the West of the Nile Valley

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As discussed earlier, these valleys are considered natural structuring elements in the region, which spatially link the locations of the oases together.

Desert

The common binding element in the region is simply the desert, which surrounds all the settlements in the region.

The oases are located within the Sahara desert, which despite its harsh climate, possesses natural attractive elements, such as sand dunes, mountains, and different types of "deserts". During the several field trips, some of these features were quite visible and identifiable, such as the White Desert and the Black Desert in addition to different natural formations.

Fig 8-4: Sand dunes surrounding an oasis

Water

Water is considered a common factor in the region, not because of its existence, which is obviously rare, but because of its pattern of existence within the settlements.

In fact GOPP (1998) argued that in terms of water, it exists within an underground rocky reservoir called the Nubian reservoir extending underneath the whole region. However, the presence of water in the settlements is manifested through water wells, which used to define the locations to construct human settlements since ancient times.

Fig 8-5: lake on the edge of an oasis in the desert

A visible characteristic, which is common in almost all settlements, and traced through the field trips, is the water lakes in the surrounding depressions of the oases. These are formed as a result of irrigation drainage from surrounding fields, which is a unique feature in the Egyptian desert settlements. Should the spatial structuring elements on the level of settlements be analyzed, these lakes would be considered among them.

The presence of these lakes and the different types of deserts discussed above contribute to *the natural assets* of the region that could be taken into consideration when setting development visions and strategies for the region. According to Friedmann (2006) these assets are based on the picturesque sceneries, which could be engaged in tourism while taking into consideration the fragility of their elements and the importance of tackling them in a sustainable way.

At the same time, the fact that these settlements are in the desert gives them a tangible spatial asset in terms of possibilities of future expansions with no restrictions, unlike the Nile Valley for example, in addition to the uniqueness of the space which is described as "pure and virgin" by one of the interviewees as mentioned in chapter seven.

This corresponds as well to the *environmental assets -* as described by Friedman - of the region which includes the quality of the surrounding environment, with almost no pollution. However, the use of these assets requires a careful intervention with coherent planning in the region to preserve these assets while using them.

8-3-2 The Built environment

The built environment as discussed earlier is composed of human settlements, utilities and infrastructure. As seen from the regional spatial structure, the cities, villages and the regional infrastructure that links them together represent the main man-made structuring elements of the study region, which were directly affected by the regional climate as discussed earlier. These three sub-categories are discussed as follows.

Human settlements

The built environment within the human settlements of the region share similar characteristics, in terms of their evolution, urban fabric and architecture, which represent a distinctive relationship between these settlements.

As described in chapter six, each group of settlements consists of a capital city and some villages that are organized in a hierarchical way, the similarities within these groups are briefly discussed in the following way.

The cities

Based on the field trips' observations, analysis of satellite images and the previous development attempts that took place in the region, discussed in chapter six, it is concluded that the cities of the region share the following characteristics:

- In terms of evolution

The cities evolved initially as villages, which started next to water sources (wells), with the mosque marking the main square as the initial core of the settlement around which the community extended, most of its streets were extremely narrow allowing only humans and camels to pass through (Hamad, 2002). These villages were later planned into cities during the development attempts of the 1960s, which took place in the cities of Frafra, Dakhla, Kharga and Bahareya, while Baris became a city recently in 2003.

- In terms of urban fabric

Because of this evolution, it is noticed that the urban fabric in the cities, is a mixture of a spontaneous vernacular fabric typical for desert settlements and a planned urban fabric.

The vernacular fabric is found mainly in the old core of the city that was once a village, while the modern fabric is found outside this core.

In most cities, the old cores date back to hundreds of years, for example in Kharga, its core dates back to the 10th century; it was built of mud bricks and riddled with tunnels in the form of a covered fortress. The remains of that part are found today in "Darb El Sendadeya" a district within the city (Vivian, 2000.)

Fig 8-6: The Vernacular fabric of the old core in Kharga

- Architecture

The elder parts of the cities were characterized by their vernacular desert architecture, which was adequate for the desert climate, while the planned parts are of concrete and red bricks buildings, with no significant architectural style.
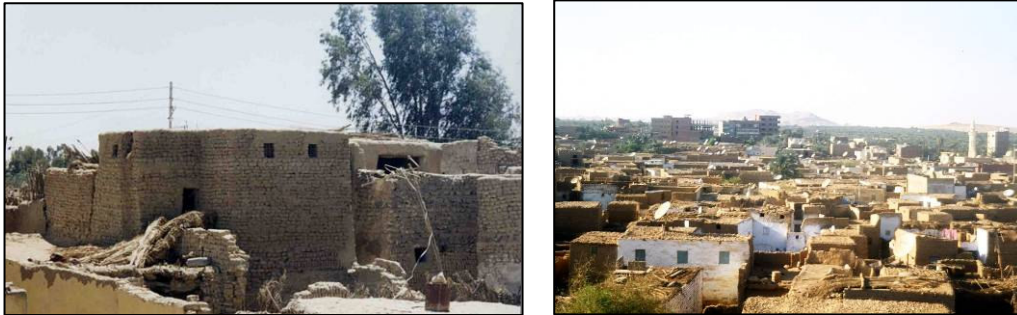
Fig.8-7: Vernacular housing and its transformation to concrete buildings in Kharga city

Unfortunately, in some cities, with the most striking example being Kharga, the majority of the vernacular houses are deserted since the mid 1990s, due to the October 1994 flash floods which took place all over Egypt, causing the flooding of these houses, thus enforcing many people to stay several days without shelter. This experience led them to decide living in red brick and concrete buildings, despite their acknowledgment that their vernacular houses were climatically adapted to the context way beyond the new ones[113]. Consequently many vernacular houses were demolished and replaced by new buildings of 7 to 8 stories, while keeping the old foot prints.

- Mixed rural and urban land uses

Due to the origins of the cities and the fact that many of their inhabitants work in agriculture even as a second profession; in many cases the fields interlocks with some districts of the cities, such as Kharga as illustrated in the opposite figure.

In *Bawiti city the capital of Bahareya,* there are no clear boundaries between the city and the surrounding villages,

Fig. 8-8: Ariel view of Kharga city, showing the penetration of the fields within the city

eventually they are considered one agglomeration, as seen in the figure below (Hamad, 2002).

Fig 8-9: Bawiti city in Bahareya merging into one agglomeration with the surrounding villages

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The villages

With the same approach of observation and analysis, it is concluded that the villages in the study region, are of three main types:

- **The vernacular villages**, which evolved in the same manner as discussed above, with some of them dating back to hundreds of years such as the Islamic settlement of Quasr in Dakhla.

- **The planned villages**, which were constructed during the government interventions in the 1960s and some recent ones near Baris in Darb El Arbaeen, as discussed in chapter six. In some cases, there are planned extensions of vernacular villages.

- **The spontaneous migrant villages,** which are constructed by the migrant farmers from the Nile Valley in Frafra and Bahareya as discussed earlier in chapter six.

Fig.8-10: Vernacular village of Balat in Dakhla with a new extension

Fig. 8-11: Algeria village in Kharga, planned village

Both in cities and villages a special spatial quality exists within the vernacular fabrics, in terms of their capability in facing the desert climate and establishing comfortable conditions for living. Therefore this is considered as a **regional spatial asset**.

At the same time, this fabric is considered an attractive element to the visitors of the region for its different ambiance and experience, simply by walking through, than of typical fabrics in the Nile valley.

The vernacular housing therefore is considered among the *cultural assets* of the region, which are described by Friedmann (2006) as the physical heritage represented in historical buildings and distinctive neighbourhoods. It reflects how people lived (and live) in the desert in earlier times, which to many visitors, Egyptians and foreigners alike, is considered unique.

However, these assets need to be developed and used in a sustainable way; they should also be protected from the deterioration and demolition that is currently affecting them. For the settlements in general what is considered a quality that does not exist in the Nile Valley, is the low population density, hence, no crowdedness.

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[113] Interview held with some local people and city officials in Bahareya in 2001.

Utilities

The discussion here reflects briefly on the utility networks that extend through the region and linking its settlements together, but it does not go in detail in discussing the utilities within each settlement as this is not the scope of this thesis.

In terms of telecommunications the study region is linked to both the fixed phone network and more recently to mobile phone networks, however, there is no coverage along the regional roads, which do not have land lines as well, which makes a drawback in relation to *the cluster of regional assets that reflects the quality of infrastructure*.

At the same time, in the study region the tangible network that links its settlements together and to other places in Egypt is the electricity network, since there is a direct link from Kharga to the national station of electric power generation in the High Dam at Aswan, which is the main source of electricity in Egypt.

As observed in the field visits, the region is connected to the internet in most of its settlements mainly through slow dial up connections; yet, broadband connections exist in a limited way.

Physical infrastructure

Physical infrastructe and transportation networks are considered an intergral part of the built environment of the region. These include road networks, railways and airports, together with the different modes of transportation.

Road networks

The five groups of settlements are connected with a regional road starting from Giza, passing by Bahareya, Frafra, Dakhla, Kharga and Baris groups. There are also two other links from Kharga to Asuit and form Baris to Luxor and hence Quena on the Nile valley[114]. These are considered the most important regional roads in the study region; and are illustrated in figure (8-11).

At the same time, other regional roads were recently constructed to link Bahareya with Siwa in the North West, and another regional road linking Kharga and Dakhla with the new development areas in the south of Egypt (Toshka and East of Owinat) near the borders with Sudan[115]. The path and locations of these roads are of course based on coherent planning to achieve accessibility within the region and with other places in Egypt.

For these reasons, there are other roads that are scheduled for construction to achieve further accessibility with the plan to construct the so called National road that would run from Alexandria in the North and end in Aswan in the South to the west of the Nile valley, from which transverse roads will be constructed to link it with the oases.

However in most cases, as observed from the successive field trips these roads suffer from a severe lack of road services which is considered a major drawback to the quality of roads.

Railways

As for railways, the region is poorly linked with the Nile valley with only an industrial line that runs from the iron ore mines in Bahareya to transport the ore to the factories near Cairo, and a similar one in the south running from Abu Tartour near Kharga to transport phosphate ore to Quena and further east to the ports on the Red sea. These are illustrated in figure (8-11).

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[114] There is some dirt roads that link the settlements of the study area with the Nile valley, but are of low use.

[115] According to EL Ahram Daily newspaper in December 2006, the contract for constructing this road had been finalized with a company from the Emirates and would soon commence.

[117] During the field work in Kharga, an official in the provincial government put me in contact with his friend who is working as a director in the town hall of Dakhla that is almost 190 Km away.

It is important to mention that there was a plan for longitudinal high speed train that would link the North of Egypt to its South and runs to the West of the Nile, yet, there is no evidence towards the commencement of its implementation.
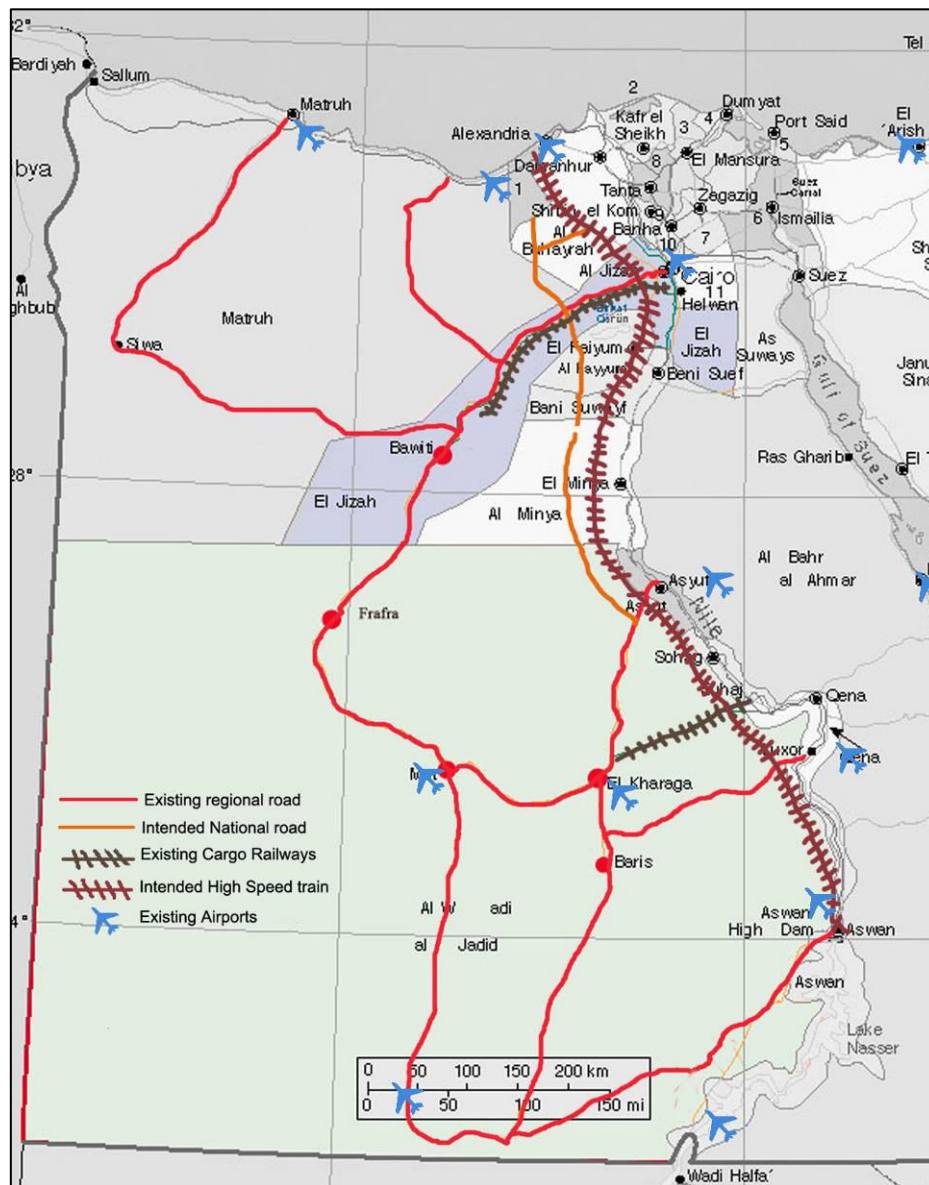
Fig 8-12: Physical infrastructure and transportation networks in the region
Adapted by the author

When interviewed, Prof. El Demairy, the former Egyptian minister of mobility in September 2003, stated that the ongoing state plan for transportation and accessibility is focusing on establishing transverse linkages with East and West of the Nile, hence leading to widening the area in which human settlements can grow, eventually expanding the populated area of Egypt within this frame.

Airports

Finally there are already two airports in the study region, which link it with the rest of Egypt and the Nile Valley, as shown in figure (8-11).
However, there are limited flights to Kharga in present day declining from two weekly flights run by Egypt Air but seized to exist since 2003, which was considered by many officials from the study area as an inappropriate and unjustified decision.

The existence of these infrastructures is considered an asset to the region in itself as it gives a solid base to start from. The region is considered accessible; yet, the quality of these infrastructures is not a regional asset in itself, as discussed above, with the lack of adequate road services and shortage of railway connections and flights. In addition to the shortage of transverse links with the Nile Valley that are considered a constraint to the region's accessibility, accordingly these shortages should be overcome when intervening in the region to achieve development. Should the missing elements be substantiated the transportation and accessibility infrastructures would form a coherent regional physical network to host the other types of regional networks, as seen later in the discussion.

8-4 Social relationships
This is the second set of relationships in the study region and is composed of three categories:
- Human Relationships, which refer to the existing relations between the peoples of the different cities in the region.
- Regional social services, such as health and education
- Administrative relationships, which refer to the provinces to which the settlements of the region belong.

These categories are discussed in the following sections.

Human relationships
Human relationships refer in this study to the relationships between the inhabitants of the different groups of settlements in the region, and the more general characteristics that are similar among them.

It is not the intention of this thesis to deeply investigate this aspect; however it is necessary to give an idea on such socio-cultural relationships, as they link the people of the region together in terms of evident resemblances. It should be taken into consideration that the ideas reflected here are based mainly on observations from the field work.

In general
Vivian (2000) refers to the settlements of Western Desert as conservative in nature, where tradition is the basis of all codes of conduct in which the social law is stronger than any legal mandate. Whenever there is a dispute it is solved by the elders of the family/tribe, or in complicated matters, the mayor of the village would give his judgment.

In fact, the social characteristics of the people of the oases is quite different from those of the Nile valley, in terms of their proper behaviour and kindness, while the others are more affected by the morals of crowdedness. For example within the five groups of settlements, people are characterized by their hospitality and good conduct, where there are extremely low crime rates, where crimes are usually committed by the migrant population and not the locals.

In specific
Through the field work, it was clear that the three groups of settlements of Kharga, Dakhla and Baris, had strong social ties together. People know the main families in each of these settlements, and even knowing personally some people from each family. This could be attributed to the fact that many of those working in the public service sector do not necessary live in the same location as their job.

Some might be brought up in other cities (or villages) but settle for their jobs in a different city; others are simply commuting daily or weekly to their home towns. For example two of the executive personals working in Kharga are from Baris and Dakhla.

At the same time, because of the common training programs and workshops for the civil servants in the different cities, several social networks are easily established[117].

These relationships are also established because of education, as discussed in a coming section, students travel to other cities for their secondary school education and later for higher education in specific universities in the Nile Valley, hence, amicable ties are established easily. Having the same profession and doing specific businesses establish strong ties between people, as seen later in this chapter with people working in tourism and their strong relationships even if they are hundreds of kilometres away from each other.

These relationships contribute directly to *the social and cultural assets of the region*, which are manifested in the cultural codes and traditions of the region and the strong social bonds among its people, at least those who belong to the same group of settlements. These traditions are considered the growing ground for the elements of trust, cooperation and sharing responsibilities, which as seen from the discussion in chapter three are considered among the success factors for networking and establishing networks.

Regional social services

These are the services that exist in specific settlements and cover several settlements in the same province or in different provinces, eventually leading to the flow of service seekers within the locations of these services, thus leading to the creation of spatial relationships between them. There are different categories of these regional services such as health care services and educational services, which are briefly reviewed as follows.

Health care services

According to the New Valley governorate year book of 2005, the number of health care units almost doubled in comparison to 1981, with 11 hospitals and 32 health units. In most cases these facilities are located in cities and major villages to serve smaller villages that administratively follow them.

According to the UNDP Egypt Human Development database (EHDD) of 2003[118], the rate of health units available in the study region is 4.6 to 6.3 units per 10000 inhabitants which falls into the medium category defined by the UNDP to be between 4.4 to 8.49 units per 10000 inhabitants, making the study region in the 3rd place in terms of the availability of these health units and hospitals relative to the country, this is illustrated in the opposite figure. However, quantity solely is not the reference of the service it's the proximity and quality that matter most.

Fig 8-13: Availability of health units and hospitals in the Egyptian governorates.
Source: UNDP's EHDD (2003)

According to GOPP (1998) the health care service is characterised by low quality in many places in Egypt, including the study region. Therefore, there is usually a movement by the inhabitants of smaller settlements to the cities seeking more specialized medical care in their hospitals. In many cases patients seek even more specialized services hence they travel to cities in the Nile valley, mainly Asuit because of its specialized university hospitals and of course Cairo.

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[118] http://62.193.81.195/EGYHDR/default.aspx, January 2007.

In an interview with some locals in the new migrant villages of Frafra in 2006, they pointed out that even with the presence of health units in the major villages, for them it is still far away to reach specially in emergency cases (e.g. snake bites) with several complaints on the quality of services provided to them.

It is clear from the above discussion that radical improvements in health services in the region are needed to support its human assets. As discussed by Friedmann (2006) a good quality of life and the provision of health services among others, contribute to the quality of the human assets of a region, which is not always the case in the study region.

Education

According to the UNDP (2003) the New Valley governorate which is the largest part of the study region falls among the governorates with high education index of a value of 0.791 while the high values set by the UNDP fall between 0.719 – 0.811, with a 39% of the population above the age of 15 with secondary or higher education, which is ranked 6 of the 27 provinces in Egypt.

In the whole region there is only one faculty of pedagogical studies in Kharga, while there is relatively high percentage of those with higher education qualifications. This is because most of the university students seek their education in universities in the Nile Valley, mainly in the University of Asuit in Asuit city, South Valley University in the cities of Quena, Sohag and Aswan, Menia University in Menia city and the different universities in Cairo.
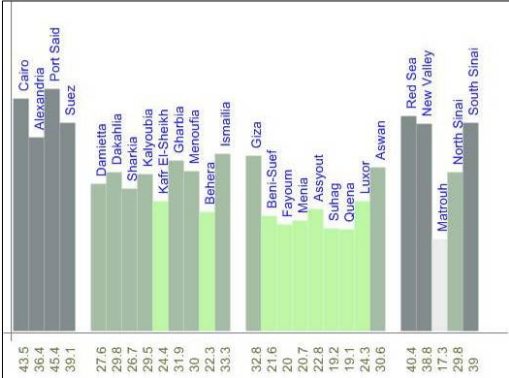
Fig 8-14: Percentage of people above the age of 15 with secondary school or higher education. Source: UNDP's EHDD (2003)

For secondary education, the movement of students takes place within the group of settlements to which they belong, for example in the Kharga group of settlements there are eight secondary schools in Kharga city and no secondary schools in the major villages of the group, eventually there is a daily travel to these schools.

Some of the Kharga city officials further mentioned that students from the Baris group of settlements seek secondary education in Kharga, maybe because they only have one secondary school in Baris. Other officials mentioned that a similar relation exists between Frafra and Dakhla, where students from Frafra (which only has one secondary school) seek their secondary education in Kharga.

If this situation is compared to Friedmann's clusters of assets, it falls short from contributing to enhancing the *human and intellectual assets* of the region, since the quality of the educational institutions are considered essential to improve the region's competitive capabilities that are essential to its future. Accordingly, it should be taken into consideration when carrying out the development attempts, to achieve a better distribution of educational and health services, while enhancing their qualities, and perhaps the establishment of a university to serve the region rather than travelling to other regions.

Administrative relationships

Having discussed the administrative settings of the study region in chapter six, brief comments could be given on that issue as follows:

- Since four groups of settlements (Frafra, Dakhla, Kharga and Baris) belong to the same province that is the New Valley Governorate, a frequent interaction among these groups takes place, in relation to the settlements' administrative setup and interactions. City officials from Dakhla and Kharga, in the field visit in spring 2006, mentioned that

there are usually training events, and workshops regarding development issues in which personals from the four groups of cities participate, hence, social relationships are established in the course of these frequent events.

- On the other hand, since Bahareya belongs to Giza governorate, its main interaction is with Giza, as illustrated earlier, with poor relationships on the administrative level with other settlements in the study area (fig: 6-1).

- In terms of planning regions, discussed in chapter five, the whole south of Egypt belongs to the same planning region, therefore, should regional plans be considered in the future, settlements in the New Valley governorate have potential flexibility of development approaches linked with other settlements in the South of Egypt (fig: 5-1). As for Bahareya it belongs to the greater Cairo region, which is a different context. This situation raised questions on the efficiency of the current planning regions and discussed in chapter six.

A clear constraint is the administrative affiliation of Bahareya to Giza governorate and the Greater Cairo planning region. Because of bureaucracy, there is almost an absence of cooperation with the settlements of the New Valley governorate in terms of regional development attempts. While for the rest of settlements, it is considered an asset that they all belong to the same governorate i.e. New Valley and the same planning region; hence cooperation for regional development could be easily established.

8-5 Sectors of activities

This is the third set of relationships in the study region, which has physical and social dimensions, as discussed earlier. These sectors of activities are the ones that exist in a complementary way within the different settlements currently in an informal way. This is based on relationships between the people related to them, for example within the tourism sector several informal relationships of cooperation exist between the people working in it; these are identified as follows :

1- *Mining¸* which exists in Bahareya for the extraction of iron ore, then this ore is transported by railway to the steel factories in Cairo to get processed. Similarly close to Kharga, extraction of phosphates takes place, then it is transported by railways via Quena in the Nile valley to Safaga port by the red sea for international export.

2- *Tourism,* where tourism activities correlate together among the five groups of settlements of the study region in addition to Cairo and Luxor in the Nile valley, forming a loop of tourist attractions, hence an informal correlation takes place within these settlements.

3- *Agriculture and agro industry,* mainly in the southern groups of settlements of Kharga and Dakhla a strong relation exists based on date production, where most of the date crops produced by Dakhla are processed in the factories of Kharga. In addition there are direct supply links of agriculture products to and from locations on the Nile valley such as Asuit and Giza in which trade of agriculture products takes place.

The quantity of flows, of people or goods, between the settlements of the region in relation to these sectors reflects the strengths or weaknesses of these relationships. Not only activities establish these kinds of relationships, which require movement from one place no another, but also regional services such as education and health services as shown earlier.

The regional relationships that are based on the regional services and activities are illustrated in figure (8-15).
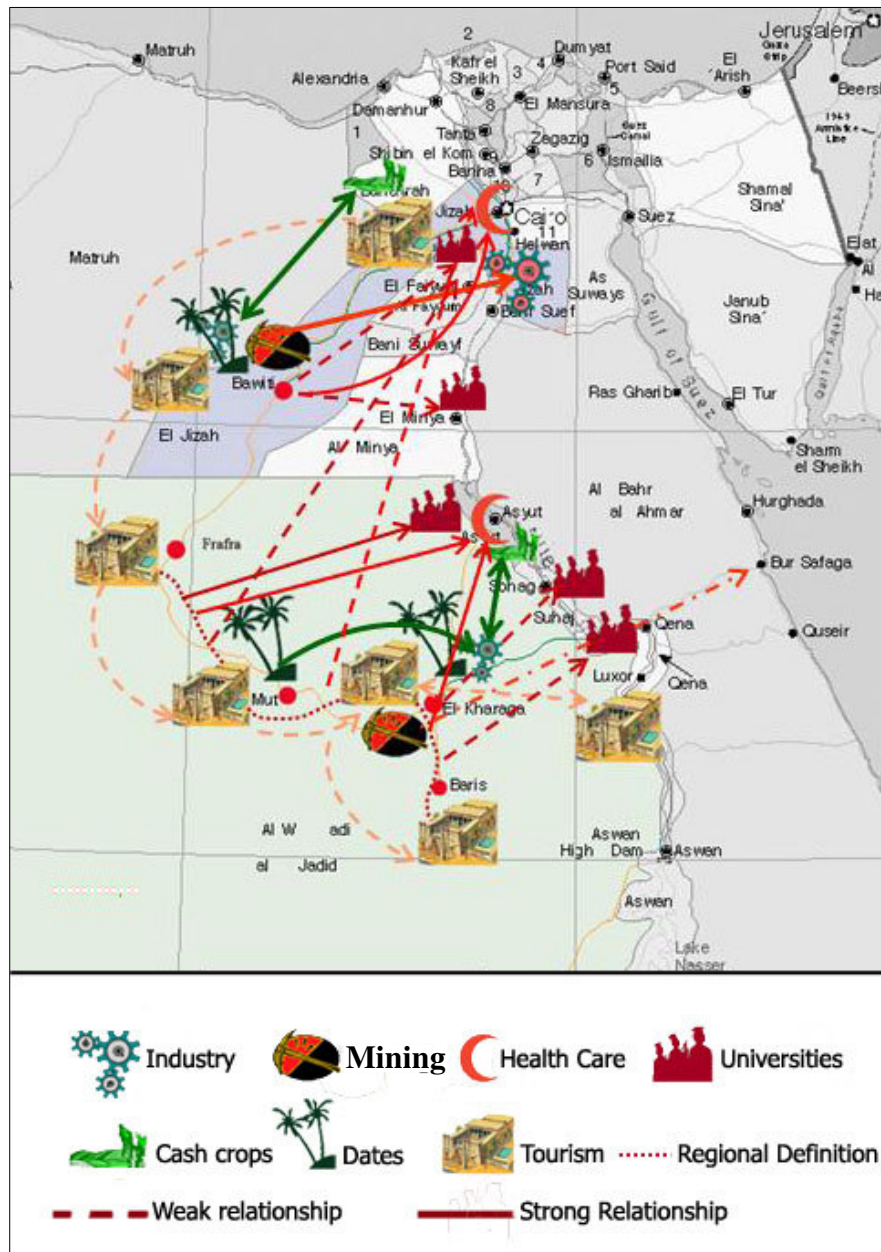
Fig 8-15: Existing relationships in the region
Compiled by the author

The sectors of activities mentioned above i.e. tourism, agriculture and mining are the main activities together with education that were proposed by the interviewed academics /consultants in chapter seven to be the base for establishing regional networks. Thus, the existing relationships within the region that are based on these sectors of activities are analyzed to find out if they can be further developed into networks or not.

To do so, the concept of the three layered networks i.e. actor, functional and physical networks, which was discussed at the end of chapter three is used in the analysis.

However, the analysis is done in a reverse order, as such, the existing physical infrastructure in the study region, which if further enhanced would form a regional physical network, has been already discussed in this chapter. This layer supports the different functional networks in the middle layer as they would all use the physical infrastructure.

Thus in the coming analysis, the existing sectors of activities are discussed, while stressing on the existing relationships within the region that are based on them. If they are found to be forming a solid base, further development of these relationships can lead to the formation of

functional regional networks, which is the second and middle layer of the framework. This is accompanied as well with a SWOT analysis that would help later in setting a development vision based on the establishment of regional networks.

Finally the relationships among the actors involved in each of these sectors are analyzed in terms of their role, power, interests and vision, taking into consideration that these actors could form the actor networks that would control the middle layer and direct it to realize their objectives and interests.

Thus the aim of the following sections is to verify if the analyzed sectors of activities and the relationships between the related actors could indeed be the base for forming regional networks, which is discussed in chapter nine, based on the three layers frame work.

8-5-1 Tourism

For many years tourism in Egypt was linked in the minds of both Egyptians and International tourists to the Roman, Greek and Pharonic attractions along the Nile Valley. This was coupled with the mass tourism approach of diving and seaside resorts along the Red sea.

However, during the past 10 years there has been a gradual increase in the number of tourists visiting the area; over the years, relationships between the cities of the region evolved around this activity.

This section investigates the assets and opportunities for the tourism sector in the region; it also looks at the relationships between the different cities of the region, which are based on tourism and its related activities. This investigation is based on the observations made during field trips to the region, in addition to some interviews that were held in the region in 2006, with people working in the tourism sector, mainly hotel owners and tourist guides, in addition to city officials (see annex 3 for the questions asked in these interviews).

Who, and when?

Most of the international tourists, in addition of course to Egyptians, visiting the region are Europeans, Americans and recently Koreans. It is not strange to find Western tourists visiting this part of Egypt, as in the near past many explorations in the Western desert were done by German and British expeditions[119], and with current archeological joint ventures more Europeans get to know about the region. As for Koreans, these are their first years in visiting the region, which according to hotel owners is gaining momentum quickly.

The tourism season in the region spans between October to April and stops in the summer because of the harsh weather that extends from May to September with temperatures breaking the 40°C mark.

A Region of attractions

Basically tourists would pass through this region for a set of attractions in each of the 5 different groups of settlements, where warm and hot springs, vernacular villages and picturesque vegetations are common in most of them. These represent the cultural and natural assets of the region as discussed earlier. The following paragraphs illustrate briefly the kinds of attractions in the region, starting from the north in Bahareya to the south in Baris as witnessed during the successive field trips.

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[119] Detailed information on these expeditions is mentioned in Cassandra Vivian's book: The Western Desert of Egypt, 2000.

- Bahareya Oases is the first group on the route; with several ancient temples dating back from the Pharaonic and Greek eras, in addition to the recently discovered Valley of the Golden mummies[120]. The oases are characterized by their vernacular houses that despite being mostly vacant are considered an interesting attraction and an important cultural asset of the region.

- Frafra follows with its White desert, which is located 40 km North of Frafra in the direction to Bahareya. This location is 25 Km deep off the regional road and is famous for its lime stone formations that are white in color (hence the name). It is a famous destination for safari and desert camping for both Egyptians[121] and foreign tourists. In many cases, tourists reaching for Bahareya would take it as a starting point to visit the white desert and Frafra (El Wakil et al, 2000). This site represents one of the natural assets of the region with its rich picturesque formations.

- The third stop on the route is Dakhla oases, which is famous for a diversity of attractions that are characterized by their 1000 years old Islamic village of AL Quasr, the tombs and temples from Pharaonic and Roman times, which are important cultural assets, and finally natural attractions like the fish pond.

- Kharga, the capital of the New Valley Governorate would be the fourth stop. It is considered the biggest city in the region with another set of attractions. The oases had the reputation since Pharaonic era as the place for exile and asylum[122], which is reflected in one of its famous attractions, the Necropolis of Bagawat that dates back to the early Christians who went there seeking asylum from the Roman rule. This could be seen in some 263 mud-brick chapels in the area. Of course there are several temples that date back to the Pharonic and Roman times, in addition to Roman ruins of ancient convoy posts in the desert[123].

Fig. 8-16: Bahareya's Golden Mummies

Fig. 8-17: Frafra's White Desert

Fig. 8-18: Dakhla's Ancient Islamic town of Quasr

Fig. 8-19: Kharga's Necropolis of Bagawat

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[120] This discovery took place in 2000 and was broadcasted live across the world on the National Geographic.

[121] The White desert became widely known to many Egyptians after a Jeep Cherokee commercial was shot there in the mid 1990s and aired on national TV for several weeks.

[122] According to Vivian (2000) Banishment to the oases was a punishment that existed since Pharonic era, if a person lived in Lower Egypt then he was deported to Kharga and sometimes Dakhla oasis, if he lived in upper Egypt, he was deported to Siwa or Bahareya, even in modern times, the oases remained as the exile for political and opposition activists in the 1960s and 1970s mainly to what is known as the oases prison.

[123] http://lexicorient.com/egypt/kharga01.htm , July 2006.

- Finally Baris that comes as the fifth location in the loop before heading to Luxor. The typical types of attractions are found there mainly Roman temples and ruins of ancient convoy posts. There is also a contemporary attraction which is the village built by Hassan Fathy in the 1960s according to his line of work on vernacular architecture.

The locations of some of these monuments and attractions are illustrated in fig 8-21.

Fig. 8-20: Hassan Fathy's village at Baris
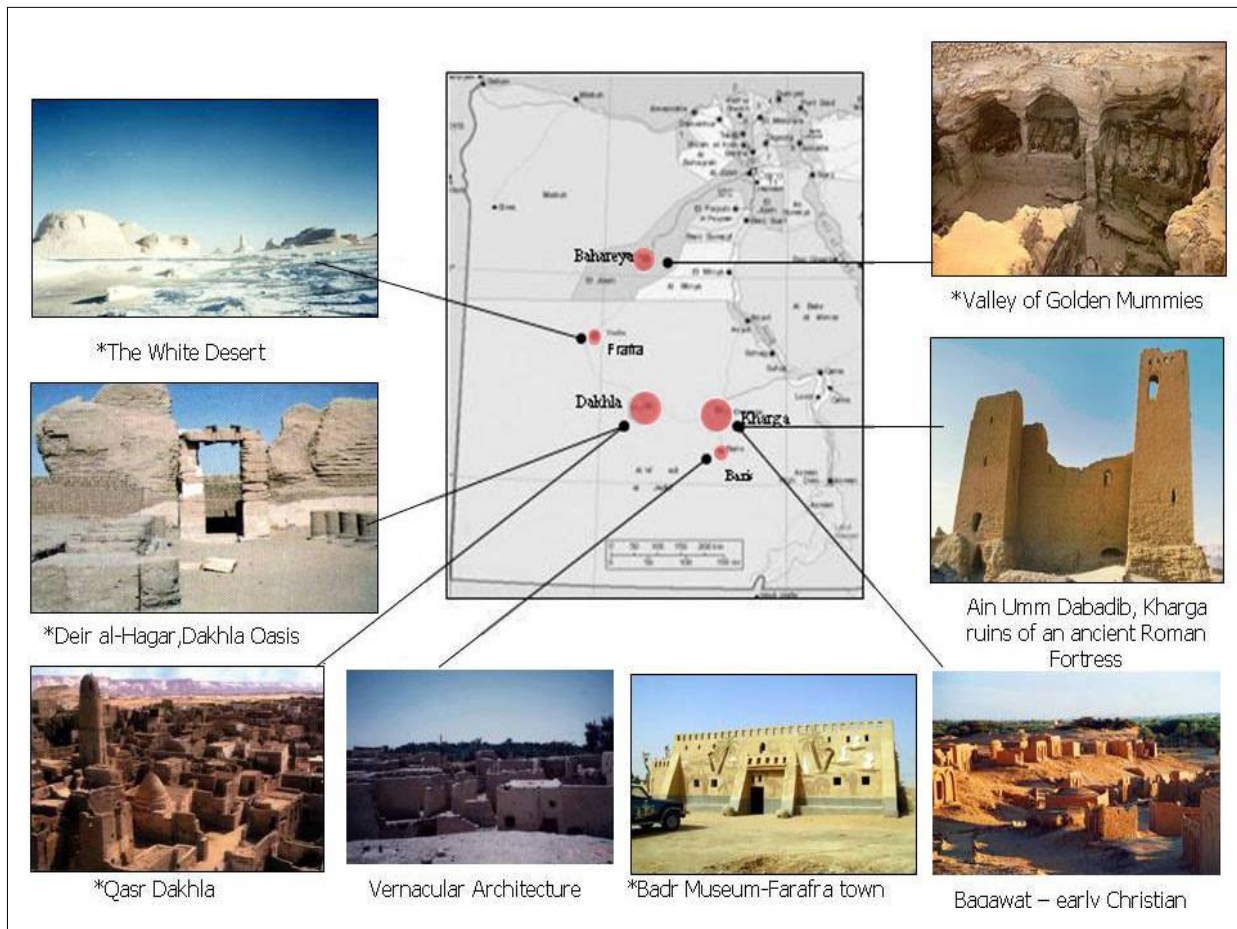
Fig. 8-21: Monuments and attractions from the study region

These monuments are considered among the historical- cultural assets of the region, representing its physical heritage that has been there over the years. These assets indeed should be used within the development of the region, but through a cautious intervention because of their fragility in order not to negatively affect them by flows of tourists.

Relationships in the region

All the five groups of settlements are involved in tourism, where there are tangible relationships between them, based on this sector. As argued earlier, tourism could be the base for one of the functional regional networks forming the middle layer of the framework. As such this section shows the existing relations of this sector in the region.

According to the hotels' employees there are two methods to start an excursion in the loop; the first one is through a tour operator either in Cairo or abroad, in which the program is set up and planned from the beginning, where the hotels hosting the groups of tourists are contacted directly by the tour operator.

The other method is to start the tour independently, which is done by groups of European backpackers, smaller tourist groups and in many cases Egyptian tourists. In this case the tourists would head for the first stop on the loop either from the North in Bahareya or from the South at Kharga. In most cases they go to a recommended hotel, from which they get directions to

Fig.8-22: Tourism regional inter-relationships

where they can stay in the next oases. As such, the different hotels in the region are cooperating together in an informal way.

- *Two sets*

In the second method, the tourists usually do not go through the entire loop; they visit either the Northern Oases or the Southern Oases, since in many cases the time set for the visit is within a tourism package from either the south in Luxor or the North in Cairo, making the time to visit the region tight and limited. In fact to have a reasonable visit to all settlements of the region at least 10 to 15 days are needed.

The Northern set is composed of Bahareya and Frafra. Coming from Cairo, the attractions of Bahareya are visited first, and then as the main attraction in Frafra is the White desert, camping trips are organized by hotels in Bahareya for a night after which the tourists head to Frafra for the rest of the day and complete the second set of attractions, while dining at its hotels, afterwards they head back to Bahareya.

In principle accommodation services are provided for both cities in Bahareya, while the accommodation facilities in Frafra make more sense when they are used by tourists doing the whole loop and coming from the south, where the distance from Dakhla, the third location in the loop from the south, to Frafra is about 300 Km which requires accommodation before camping in the white desert.

The Southern set is composed of Baris coming from Luxor, passing by Kharga and then Dakhla. Like the previous set, tourists would either take the whole loop or would eventually go as far as Dakhla and return to Luxor. In Principle Kharga is the advanced center of all three groups of settlements, simply because it is the capital of the New Valley Governorate. Its facilities cover Baris as well which is usually part of the visit to Kharga with limited existence of accommodation for tourists. Dakhla is also considered an important group, due to its variety of attractions, which requires a stay of several days. In addition, should the tourist groups be coming from the North through Frafra they usually need accommodation after the 300 km trip in most cases.

Tourism as a regional sector of activities

As part of this study a Strategic Creative Analysis (SCAN) was made in regards to tourism in which a Top Rank Objective (TRO)[124] was selected, that is "Promoting Tourism as a Regional Activity Sector". Consequently a SWOT analysis is made to investigate the attainability of this objective and to help find a strategy to achieve it.

Fig8-23: Setting the TRO
Source: Set by the author based on the model in
http://mbatoolbox.org/stories/storyReader$19 ,
February, 2007

Tourism SWOT analysis

The SWOT analysis done here is considered a provisional one, as there were no other specialists involved in it. It is basically based on, the findings from the field work together with official reports and studies including the one made by GOPP (2000), which was part of the strategic plan for the south of Egypt discussed in chapter six; this is shown in table (8-1).

An initial argument is made at this point, based on the elements presented in the SWOT analysis that is tourism could indeed be considered as a proper sector of activities to be a base for a regional network. This is seen from the strengths of the region, which includes the presence of a variety of attractions, the safety and security in the region, the already existing infrastructure of airports and the work force. At the same time the existing opportunities, which includes the annual incoming tourists to neighboring regions, reflects the possibility of diverting some of them to the region.

The strengths and opportunities of the SWOT analysis are used to alleviate and overcome its weaknesses and threats. These are taken into consideration when proposing a regional tourism network in the next chapter.

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[124] To reach for a TRO, the objectives that are foreseen to be considered are arranged in terms of answering the question why? In that sense each objective would be the answer to the Why question for the objective that is higher in priority, eventually the TRO is the ultimate objective to which there is no answer to the question why.

	Helpful	*Harmful*
Internal	**Strengths** - Presence of a diverse variety of Attractions - Existing road networks and Airports - Informal cooperation among the personals involved in tourism - Existing work force that is expandable - Marketing attempts made by the hotel owners for the region - Hospitality and acceptance by the local community towards the visiting tourists - Competition among different hotels in the region leading to a gradual enhancement in the services they provide - Hesitant use of the internet to promote the region for tourism - More Security and safety in comparison to major Egyptian cities.	**Weaknesses** - Questionable quality of tourist services - Misuse of archeological and historical sites by the locals, specially the ancient vernacular sites - Almost no services on the regional roads - Public transportation modes to the region are in bad condition - Limited flights to the region - Minimum efforts in promoting the region by the ministry of tourism and providing the sufficient support services - Lack of official coordination between cities - Minimum marketing for the region globally, limited people know about it world wide.
External	**Opportunities** - Annual pool of tourists coming to close sites in Luxor & Aswan in the south (close to set B) and to Cairo in the North (close to set A) - The affordability of modern ICT The obsession of young European tourists of searching for new and exotic places to visit.	**Threats** - The existence of famous destinations for international tourism in the Nile valley, Sinai and the Red sea, that are globally accessible on daily bases and over shadow other tourist locations. - The volatile regional situation in the Middle East, giving a fragile characteristic to the tourism industry.

Table 8-1: SWOT Analysis for tourism sector

Powers and interests of related actors

In order to tackle the above aspects, it is important to highlight the actors involved in this sector of activities, and to know their roles, interests, visions and powers. Eventually this would provide an idea on whom of the actors to approach and depend on for future interventions within the tourism activity. This is done to investigate the possible settings of the actor network that comes as the first layer in the three layered framework.

The main actors involved in this activity include:

- The private sector, in terms of the hotel owners and domestic/international tour operators in addition to possible investors targeting the tourism sector.
- The central government and its affiliated involved ministries which include: The Ministry of Tourism (MOT), Ministry of Culture (MOC) and the other ministries of infrastructure such as the Ministry of communications and information technologies (MCIT) and Ministry of Transportation and Mobility (MOTM).
- The Provincial governors and city mayors.

Fig. 8-24: Provisional overview of tourism involved actors
Source: adapted by the author

A provisional assessment of the position of these actors in terms of their interests and powers is elaborated in table (8-2) that included also, the powers of the actors, roles, interests and visions.

The local community is supposed to be an important player, however, people in the region who are not involved in this sector are mostly neutral, they would welcome the tourists and visitors to the region, but they need to be informed with the benefits they would get out of this sector to get actively involved in its development. However, this is not the case among the youth, who know that this sector can create job opportunities and expressed there desire to work in it.

Actors	Role	Interests	Visions	Power
Hotel Owners	Backbone of the tourism activity in the region	Expanding their business and achieving good revenue	Put the region on the international map of tourism	Weak political power to press for their demands according to their economic capabilities
Tour Operators	Creating packages for tourism	Expanding their business and achieving good revenue, yet there is a moderate interest regarding the region	In recent years, some tour operators started to realize the importance of the region as a possible tourist destination	Capability of marketing abroad and inland through their offices and their published tourism packages
Investors	Investing in the tourism industry mainly in constructing hotels and safari camps	Profit through tourism	Tourism is the future, but no clear vision on how far it will be developed	Limited to the capacity of investing in hotels or camps, but no lobbying powers of any kind
Central Government	Through its ministries it invests and leads for its development through different sectors among which is tourism	National and Regional development, yet, in comparison to Sinai, Luxor and Aswan, the interest of the government in the region regarding tourism is obviously limited	The region to be on the international map of tourism.	Highest power
MOT	Responsible for Marketing the region for attracting tourism and supplying the necessary facilities	Expanding the locations for tourism industry across Egypt. Yet in the region there is limited interest from the ministry	No clear visions other than having the region on the map of tourism	Considerable powers, but in many cases affected by the decisions of the central government
MOC	Responsible for conservation of monuments and the discovery of new monuments	There is a strong interest in the achieving more discoveries in the region, especially with the signs of ancient monuments around the region, currently the intensity of the works decreased.	No clear visions	Considerable power in regards to new discoveries supported by the personal Charisma of Dr Zahai Hawas, Egypt's no.1 Egyptologist if the region is still on his agenda[13]
MCIT/MOTM	Constructing accessibility networks and infra structures	Achieving accessibility to all possible development locations	A coverage of road networks on both sides of the Nile valley towards the desert to widen the inhabited area around it	Affiliated to central government, hence, subject to its decisions
Governors/ Mayors	Try to push for funds and opportunities to develop the region through different activities	Some of them are highly interested in the tourism potentials, others are less interested having other preferences in regards to other activities	Some of the Mayors foresee there cities as the hosts of many activities including Health Spas and other compounds of different activities	Provincial governors posses political powers, while city Mayors have limited powers. In both cases it depends on the character of the Mayor or Governor to achieve his agenda
Local Communities	Youth represents the work force in the tourism sector	Creation of job opportunities in the sector	Generally to attract more tourists	Weak political power, unless they approach the local councils
Tourists	Without tourists the sector collapses	Spending quality time in a safe environment	No clear visions	No power

Table 8-2: Analysis of related actors to the tourism sector

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[13] Dr Zahai Hawas has been active in the region in the early 2000s with his expedition discovering the so called Valley of the Golden Mummy which dragged international attention at that time by airing parts of the discovery live through the national geographic channel.

Based on the previous table, and the simplified graphical illustration in figure (8-22), most of the involved actors have crucial roles when it comes to fostering cooperation within the tourism sector of activities, hence:

- The Governors and Mayors of the cities (as the heads of provincial and local governments) are key actors in the process who posses tangible political powers, especially governors, to back up regional interventions for tourism, provided they are convinced with their outcome.
They could play an important role in lobbying together with the members of parliament of the study region to the central government to gain support for such interventions.

- The Central Government has the highest powers and resources, owing to the centralized system. The Key to implementing important regional projects relies within its hands. Therefore once it is convinced and involved in tourism development, it would eventually mobilize its line ministries (MOT, MCIT and MOTM) towards establishing the sufficient support actions and services for this activity.

- MOC could be considered as an important actor, partially because of the supreme council of the Egyptian monuments to which Dr Zahai Hawas is affiliated. In addition to the conservation and discovery activities, the capabilities of Dr Hawas in attracting foreign media to provide coverage for his activities could be manipulated to make publicity for the region.
In a brief meeting with the head of the Bahareya museum of monuments in spring 2006, he mentioned that the discovery efforts came to a halt after Dr Hawas got involved in other areas, and since the discovery of the valley of the mummies, the attention faded from Bahareya. Therefore, he should be approached to redirect his activities to the region again.

- Tour operators, hotel owners and investors, are key actors as well, as they, especially the hotel owners, were the ones who initiated the informal cooperation, and tried to boost the tourism activity. In fact they are considered the only actors networking together in the region. They do not have direct political powers but they have the highest interests in the region and the more innovative ideas for tourism development. It is argued that through lobbying with key political figures in the region e.g. governors, Members of Parliament, they can push for their demands.

- The youth within local communities, are the willing sectors of the population to get involved in tourism. They do not have any powers, nevertheless, if they approach the local councils of their communities perhaps they can put forward their interests in creating more jobs in this sector, yet again, they need to convince their representatives in such councils.

Forming a regional tourism network is discussed in the next chapter, using the elements of the SWOT and actor analysis discussed above.

8-5-2 Mining
According to the different GOPP reports (1983, 1996, 2000), different minerals exist in the region such as iron, phosphates, lime stone, clay, iron oxides and gravel, each of varying quantities. However, very few of the interviewees commented that the mining sector in the region could be involved in a regional functional network.
The most significant activities are that of iron ore extraction in Bahareya oases where there is a mining site and a city constructed specifically for miners, and phosphates ore extraction in Abu Tartour near Kharga in the south, which has a controversial situation. As discussed in chapter six these two sites were considered in almost all regional plans for the region, however, they almost have no direct relationships with other cities in there.

The Iron ore and the mines' city

Already discussed in chapter six, the mining activity in the Bahareya oases started as early as 1967, with a railway to transfer the iron ore to the industrial plants, in the suburbs of Cairo.

Managem city or the mines' city, about 40 Km North of the city of Bawiti, was built in the 1970s to host the engineers and the workers in the iron mines and to act as the mines administrative headquarters.

According to El Wakil et al (2000), the mine had created a lot of job opportunities in the region, and in addition to the expert engineers coming from Cairo and other cities; some of the local population joined the mining activity on the account of their traditional agricultural activities.

Fig. 8-25: Managem city near Bahareya.

Existing relationships

There are no existing relationships between the Managem city and other cities in the study region, except of course with Bahareya, from which it gets most of its labor force. At the same time, it is linked physically via railways with the locations of steel industry in Cairo, where the iron ores are transported for production.

It is a strange situation, to have the steel industry hundreds of kilometers away from the extractions sites in Bahareya and from other sites in Aswan at the south of Egypt. This could be explained in relation to the central system of the country and relating it as well to the core-periphery model that was revealing in many developing countries in the 1960s, which was the time that steel industries were introduced in Cairo based mainly on a political decision.

It is difficult to argue that with no relationships within the settlements of the region in relation to the extraction of iron ore activities, that a functional network can be established, in such conditions.

Abu Tartour phosphates project

Mining was supposed to be a prominent activity in Kharga and the New Valley in general, since there are several mineral ores in the area, yet, the most controversial project that took place in that area was the so called "Abu Tartour Phosphates".

The site of the mine is located 60 Km to the west of Kharga city, where it contains up to 987 Million tons of phosphate ore. According to the New Valley year book (2005) the elements of the project are the mine and the beneficiation plant, in addition to the infrastructure of the project that are the workers' city, the railway to Safaga port on the Red sea via Quena in the Nile Valley, the power and water supply plants.

Despite that the project started in the 1970s, it has generated massive controversy, as it had not generated the esteemed profits, thus depleting a large sum of national funds, especially in its infrastructure and deserted housing facilities.

However, the officials in Kharga stress that the problem is not with the ore's availability, instead, it has to do with political aspects, as the main partner in the project was the Soviet Union also the main importer. Since its collapse, alternative markets could not be entered for different reasons; however, recently it was possible to export some of the product to Indonesia and Malaysia.

Existing relationships

It is difficult to state that this project's location would have any relationships with other cities in the region, there is of course the physical link with Kharga through the regional road, and the link with the Nile Valley and the Red Sea as mentioned earlier.

When this mine is functioning, the labor and work force are brought from Kharga and the environs, other than that there are no functioning links at the time being with that area because the mine is currently stalled[14]. As such, the situation in Kharga in terms of mining activities is worse than that in Bahareya, which at least is steadily functioning.

Mining as a regional activity sector

In chapter six, it is mentioned that mining was considered as an existing activity sector in the region, and was included in every development plan; however, in the previous chapter, mining was almost not mentioned as a possible sector of activities by the interviewees. Instead it could be considered as a secondary activity sector in the region. This is examined through a SWOT analysis similar to the one carried earlier for tourism.

	Helpful	*Harmful*
	Strengths	***Weaknesses***
Internal	- Existence of iron ore in Bahareya and the operating mines for its extraction - The presence of sufficient infrastructure for the transportation of the ore. - Existing miner's city to house the workers. - Existence of Abu Tartour mines for phosphates extraction in Kharga - Existing settlement for housing the intended work force in Abu Tartour. - Existing railway for transporting the phosphate ore to the Nile Valley and further to ports on the Red sea. - Existing work force that is expandable - An estimated existence of other minerals in the region, related to construction sector. - The presence of intended industrial zones in several locations in the region.	- No interest among the investors to invest in heavy and advanced industry in the region. - Many of estimated minerals have not been located yet. - Problems with the phosphate mine that are stalling the project. - Possible deterioration for the infrastructure and housing facilities built for the phosphate mine project. - Insufficient marketing attempts to attract industrial investments to the region. - Isolation of the regional from the international market, especially in terms of attraction of investments to the region. - The small size of the local market that intakes the extracted ores especially those of phosphates.
	Opportunities	***Threats***
External	- The possible reactivation of the Egyptian nuclear power program, and the possible need for radioactive elements, where some exist in the study region. - Possible emerging industries in the adjacent cities in the Nile valley that might depend on the extracted ores in the region.	- The international competition in regards to exporting the phosphates ore, from other countries offering purer qualities of ore. - Possible shut down of the phosphate project by the government should the losses and criticism continues. - The high competitiveness of other regions both in Egypt and abroad in attracting investments for industrial activities.

Table 8-3: SWOT analysis for the mining sector in the study region

From the above SWOT analysis, it is accentuated that the mining of iron ore can not be considered within a regional development scheme based on regional networks, in which mining would be among the second layer of networks of the framework; because:

- Despite being environmentally aggressive, with the existence of the steel industry in both Cairo and Alexandria, it is unlikely that the industrial plants can be relocated to the extraction sites, as it is cheaper to transport the ore to the existing plants than building new ones.

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[14] This project caused critical debate in national newspapers and heated discussions in the parliament, because of the large amount of investments that were directed, allegedly, to this project in vein.

- Should any industrial plant be built for its processing near Bahareya, it would still require the transportation of the steel products to the main market in the North of the country.

As for the Phosphates project, the situation is rather critical, with the successive losses and depletion of funds consumed by the project so far. Accordingly, due to current circumstances it is hard to capitalize on the project with the calls for shutting it down and for the unclear intentions of the ministries involved in it.

However, based on the strengths of the SWOT analysis, at least limited investments could be done concerning this project, by considering the following aspects:
-   The possibility of constructing industrial plants, in the intended zones among the existing cities of the region. This depends on attracting investors to invest in industries that are based on phosphates extracts, which is not evident at the moment, hence, requires a process of marketing the industrial potentials of the region, nationally and internationally.
-   The current approach of selling the phosphate ores in the international markets has proven unsuitable; hence, there is a necessity for a different approach.

In addition to these two ores, as seen from the SWOT analysis, the precise locations of other mineral ores are not known due to lack of sufficient studies and lack of interest among possible investors, as shown in the actor analysis discussed next.

Powers and interests of related actors

The main involved actors in this sector, that would have been the basis of an actor network dealing with this activity, are: the central government and eventually the ministry of industry (MOI) and the ministry of petroleum and mining (MOPM), private sector investors and the governors / mayors.

The following tables represent the visions, interests and powers of these actors, in relation to the mining activities in Bahareya and Kharga, based on daily newspaper counts and interviews with some city officials in the study region.

For the mining sector in Bahareya

Actors	Role	Interests	Visions	Power
Central governments	Invest in infrastructure and constructing mining related activities	Achieve national revenue	Currently maintaining the status quo	Highest power
MOPM/MOI	Research and explorations, and the construction of facilities	Achieve more explorations & industrial expansion	Maintaining the status quo	Have power but in some cases require a central decision
Investors	Invest in mining related activities	No interest in the region currently	No vision currently	Tangible economic powers
Mayors / Governors	No tangible role, only the mining areas fall within their administrative areas	No interest in further development of the mining activity	No visions currently	No direct powers in relation to mining activities

Table 8-4: Main Actors involved in the mining activity in Bahareya

According to these stances, there is no current interest by the investors to invest in the region; this could be referred to the low marketing attempts done for its potentials. At the same time, despite the government's interest to achieve some progress in the project, it does not have a specific vision other than maintaining the status quo.

For the mining sector in Abu Tartour in Kharga

Actors	Role	Interests	Visions	Power
Central governments	Invest in infrastructure and constructing mining related activities	Achieve progress in the project to avoid public criticism for depleted national funds	Initially the mining area was to be an integrated zone for mining support services, and a new community	Highest power
MOPM/MOI	Research & explorations, & construction of facilities	Same position as the government	No clear vision,	Have power but require a central decision
Investors	Invest in mining related activities	No interest in the region currently	No vision currently	Tangible economic powers
Mayors / Governors	No tangible role, only the mining areas fall within their administrative areas	Interest in capitalizing on the mining activity	No visions currently	Decisions are not within the capacity of the governor

Table 8-5: Main Actors involved in the mining activity in Kharga

From the above analysis, it is concluded that the government and its affiliated ministries have the interest to achieve a certain progress in the phosphates project, to avoid public criticism. But at the same time the approaches used are not successful with almost no clear visions for development. The investors are showing no interest in capitalizing on these resources, perhaps because of the negative image that is created by the long failures of this project.

Evidently, it would be inappropriate to capitalize on the mining activity as a main stream element for achieving regional development, however, it could be considered for a secondary element with a long term strategy. Meanwhile, the lack of heavy industries in the region, could be considered appropriate to its virgin nature and quality of urban areas, thus, should any industries be established based on mining, they should be held in uninhabited area of the region, and away from any natural assets.

8-5-3 Agriculture

Should a spatial structure be made to analyze each of the settlements' groups, cultivated lands would be among the man made elements defining their space. The whole intervention process in the study region started on the bases of creating rural communities in the desert since the early attempts for regional development in the 1960s. Hence, the development of the region in early years was mainly based on agriculture, which is criticized by different scholars as discussed in chapters six and seven.

A brief overview is further given on agricultural activities through the settlements of the region, before highlighting the existing relationships within the agriculture sector of activities.

Agriculture through the region

Despite the difficulties that this activity sector is facing, it is in fact a common activity in all settlements of the region. The problem that occurred was the rapid expansion in the areas of reclaimed lands assuming that there are sufficient reserves of underground water in many locations, local government officials mentioned. This led to complications in extracting this water, as the ground pressure raising the water out of the wells decreased due to the drilling of so many wells; hence, mechanical pumping is needed to raise the water for irrigation.

As discussed in the Frafra case in chapter six, the problem exists in all locations but varies from one location to the other. The regional government officials stressed that the amount of **water available in the region is enough** for agriculture expansion even by using the flooding technique in cultivation; however, the problem is in its extraction.

The Current situation

Since the four groups of settlements of Dakhla, Kharga, Frafra and Baris belong to the same governorate (province), they were easily ranked by the governorate officials in terms of their productivity and fertility. As such, they ranked Dakhla as the largest in terms of agricultural productivity, followed by Frafra, Baris and finally Kharga.

But should Bahareya be considered as well in this assessment, it could be roughly estimated third after Frafra and Dakhla, yet, this estimation is based on visual observation in the field and comparison of the cultivated areas of the different locations using satellite images.

A short account on the situation of this activity in these settlements is given relying on the information gathered from the field visit, the year book of the New Valley governorate (2005) and information gathered from local officials.

Dakhla is considered the food basket of the New Valley, at least for Kharga and Baris, where about 43420 Feddans are cultivated inside the official boarders of the group and another 93260 Feddans[15] outside these borders. The group of settlements could be ranked second in terms of the possibilities of future expansion in agriculture after Frafra. Wheat, rice, beans and dates are the major crops cultivated in this location.

The city officials mentioned that there are two kinds of crops expansion; the horizontal expansion in cultivated lands[16] which they relate to the increase in the area of cultivated land ,

Fig. 8-26: The pattern of cultivated land surrounding a village in Dakhla.

and the vertical expansion which also exists in terms of cultivating several crops at the same time in the same soil[17].

These ideas indeed are transferred to other settlements such as Kharga and Baris but not on organized basis, more on social interactions.

In Frafra, currently there are more than 25000 Feddans cultivated in these areas, which could be extended to 100000 Feddans should enough water be provided, with many crops of good quality being cultivated, in addition to husbandry in some of the areas. Like other locations in the region, problems with water supply for irrigation exist (as discussed earlier in chapter six) yet to a much lesser extent than other settlements.

Despite that migrants working in agriculture are coming to the region and the expansion of cultivated lands in Frafra is considered a

Fig. 8-27: New cultivated lands in Frafra, showing newly drilled wells

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[15] The Feddan is an Egyptian measurement unit, therefore 1 Feddan= 4200 m2

[16] They also mention that until 10 years ago the government was heavily involved in preparing the infrastructure for the cultivation, however, now most of the work is done by the citizens.

[17] For example, crops like wheat and clover are grown and on the edges date palms are planted at the same time.

phenomenon, there is a lack of proper guidance in some places in terms of proper cultivation methods, which affect the quality of the product.

The main problem that is facing the agriculture sector in Frafra, as accounted by Frafra city center (2006), is marketing. This is due to the large distances between the Frafra group and other groups of settlements especially that of Dakhla and the Nile Valley, the problem lays within the available transportation modes and their frequency.

Kharga and Baris, used to be considered one unit, until 2003, when Baris gained the city status and became the local capital for a group of villages.

In present day Baris is ranked rather higher than Kharga in relation to their possible future expansion of cultivated areas. This depends on the amount of water available for that purpose, which local officials are confident that it would last with no problems for at least 20 years[18]. Besides, to the south of Baris there are recently some reclamation projects taking place to the south of Baris, in Darb el Arbeen to establish several rural communities, using

Fig. 8-28: New villages in Darb El Arbeen

the same doctrine as the earlier attempts in the region. According to GOPP (2000), the cultivated area in Kharga reached 15150 Feddans with dates as the major crop and other crops such as wheat, tomato and sometimes rice; other areas are suitable for reclamation if sufficient water is provided. However, it is ranked fourth after Baris in terms of possibility of future expansion in cultivated lands, the main reason for that is the availability of water[19].

For Bahareya, according to El Wakil et al (2000), agriculture is also a common activity, but in recent years some draw backs took place; some of the young generation is gradually considering to work in other sectors apart from agriculture, for example tourism, and would instead hire someone else to cultivate their lands. In addition the use of chemical fertilizers in cultivation was met by rejection from several countries that used to import the date crops, which caused an economical recession for some years in the early 2000s.

However, as mentioned in chapter six, there are also cases of migrant farmers from the Nile valley, who went through similar process to those in Frafra, yet they are not supported by the local government as those in Frafra, despite an increase in the cultivated lands.

Fig. 8-29: Agriculture in Bahareya

Fig. 8-30: Cultivated lands by migrants in Bahareya

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[18] That is merely estimation by the city officials; further studies are needed though to confirm this claim.

[19] According to GOPP (2000) 120 million m³ are available/ year in that region which is the least but one quantity in terms of availability in the region.

Relationships in the region

The relationships within the settlements of the region in terms of the agriculture sector of activities vary in strength between the northern and southern groups of settlements. The southern group is characterized by strong relationships among its settlements that could be considered as a type of integration from a certain perspective, while the northern group is of broken links with a status of dependency among its settlements. These relationships are discussed in the following sections, so as to investigate if they could be further developed into a functional regional network among the networks in the second layer of the framework.

The Southern group

This group consists of Kharga, Dakhla and Baris, where there is a mutual relationship between them on one hand and with the Nile Valley on the other in the following ways:

- Since dates is the major crop in almost all settlements, and due to the fact that there are no factories for processing the dates and getting them ready for commercial use in either Baris or Dakhla, the dates are usually sent to Kharga which has several factories specialized in the processing and packing of dates. The packed dates would then be ready for marketing back in these settlements and export to the Nile Valley through the city of Asuit with which there is a direct road link.
- Basically Kharga gets several vegetable crops from Dakhla and Baris and the rest would be exported to the Nile Valley especially to Asuit, and from there to Menia and Fayoum.
- Cattle are also supplied to Kharga from Dakhla[20] and some breeds are sent to Frafra for rising, which is somehow related to agricultural activity.

Fig.8-31: Agriculture regional relationships
Source: Adapted by the author

The Northern group: the broken link

The relationships between Frafra and the southern group on one hand and between Frafra and Bahareya on the other hand are considered weak, despite the presence of some forms of interaction among each other. The location of Frafra 300 Km away from Dakhla, which has no direct links with the Nile valley, despite the plan to construct a direct transversal link to Asuit[21], puts it in a state of isolation. In addition there is no railway that would link it with other locations hence the possibilities of transporting agricultural products are limited to transportation by road.

As mentioned earlier, despite being relatively close to Bahareya, the interaction among the two settlements is very limited in terms of agriculture. A city official from Bahareya mentions that they only receive water melons and cattle to breed in different occasions.

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[20] An interesting remark is that Bees are exported from the region to Eastern Europe, a trade that has been going on for years.
[21] The road construction started, however it soon stopped, assumingly because of lack of funds.

He added that Bahareya is in a stronger link with Giza, where it gets the sufficient supplies of needed vegetables that are not produced in Bahareya. Assumingly there are links in the other way round, with Bahareya sending its date products for marketing in Giza, especially that there is a factory for processing dates in Bahareya itself, hence it does not need a relation similar to that among the southern groups.

Agriculture as a regional sector of activities

The previous chapter showed that there is a dispute among the interviewed academics and planners concerning the involvement of the agriculture sector of activities in the formation of a functional network in the region. Some favor the idea of involving this sector and considering it among the bases for development, while others are more skeptical towards this idea because of the poor outcomes of the previous regional development attempts that were based on agriculture. However, both agree that it should not be considered as a sole economic base for development, as was done earlier.

In order to have a better grasp on the issue, a SWOT Analysis was done (similar in the procedure and settings to the previous ones) aiming to investigate the incorporation of agriculture as an integrated sector of activities among the settlements of the region, which is illustrated in table (8-6).

	Helpful	*Harmful*
Internal	**Strengths** - Agriculture is considered a common activity within the region - Presence of fertile soils with possibilities of horizontal expansion in some groups of settlements especially in Frafra and Dakhla - The integration of some activities in regards to agriculture in the Southern group of Settlements - The existing links with the Nile valley in Giza at the North and Asuit at the South.	**Weaknesses** - No direct links from Frafra to Nile Valley. - Low marketing capabilities for the agricultural product specially in Frafra - The insufficient transportation of goods between the settlements - Few regional research institutions dealing with cultivation methods for these areas. - Low profile relationship between Bahareya and Frafra in agriculture based activities (trading, agro industry, etc)
External	**Opportunities** - The large estimates of ground water resources said to exist in the study region - Inflow of migrant farmers coming from the Nile valley and their activities in agricultural horizontal expansion - The existence of Toshka and East Owinat close to the study region, with the experimental farming and inflow of foreign investments to Toshka - The National road passing from the North coast to Aswan, and its possibilities of connectivity.	**Threats** - Difficulties in drilling out the ground water for agriculture. - The unsuitable methods of agriculture brought from the Nile valley by the migrant farmers[22]. - Legal obstacles that the migrant farmers might face based on the bureaucratic framework. - The presence of other areas that attract foreign and national investment funds such as Toshka and Owinat, and other areas in Sinai and the North West coast of Egypt.

Table 8-6: SWOT Analysis for Agriculture activity

Having reviewed the SWOT analysis, one could realize that the agriculture sector of activities could be considered as base to establish a regional functional network among the second layer of the framework as part of a regional development scheme. This is mainly because of the existing relationships among some settlements in the region and those in the Nile Valley and the integration of some activities related to agriculture as shown earlier.

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[22] In the Nile Valley and since the construction of the high dam in the 1970s, the main method for irrigation is through flooding the whole of the cultivated area, the method was exported to the region by the migrant farmers.

However, the level of this cooperation and integration largely varies from the group in the North to that in the South as illustrated earlier, yet, there are also possibilities of establishing regional cooperation for agriculture with the new locations of agricultural activities in Toshka and East Owinat.

The elements of the SWOT analysis are taken into consideration in the next chapter, which discusses the formation of regional networks to foster development and the setting up of a scenario for such an intervention.

Powers and interests of related actors

Having in mind the previous aspects that should be tackled concerning this sector of activities, the actors involved in it could be divided into 3 categories:

- *Farmers*, who are divided into local farmers and migrant farmers
- *Non government / private sector actors*, which include the NGOs and Egyptian and foreign investors
- *Government actors* including the central government and its affiliated line ministries which are the Ministry of Agriculture (MOA), the Ministry of Water Resources (MOWR), Ministry of Transportation and Mobility (MOTM), and the provincial and local governments.

Their positions in terms of the power they have and their interests towards the activity in the region is provisionally plotted graphically and further analyzed in table (8-7).
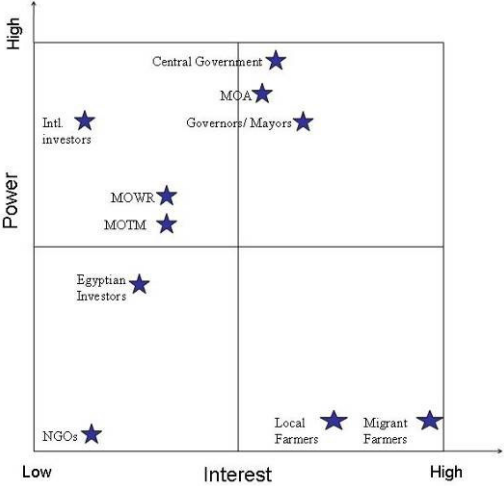
Fig. 8-32: Overview of actors involved in agriculture
Source: Adapted by the author.

Actors	Role	Interests	Visions	Power
Local Farmers	Cultivation of existing green lands & possibly reclaiming new land	Getting revenue	Currently maintaining the status quo	Almost no power
Migrant Farmers	Cultivation & reclamation of desert lands	Enhancing their life standards in comparison to their origins through land reclamation	Reclaim and cultivate as much as they can from desert land	Putting the government in a status quo situation, hence an arm twisting approach (ch.6)
NGOs	Reclamation of desert land	Currently limited in regards to the area, but usually to increase the cultivated area and enhance the living standards of the farmers	No strong activity yet, or clear visions	No power
Foreign (Arab) Investors	Investing in mega projects for agricultural development in the region	Currently most of the interests of foreign investors is focused on Toshka & East Owinat (development and the generating profits)	Currently no visions, regarding the region	High economic powers, that could be used for pressuring the government, should they be used
Egyptian Investors	Investing in land reclamation projects and related activities	Mainly of course, profit generation, but on small scales and not as the Arab ones.	Limited personal visions of having a productive land in the desert	Depending on the scale of investment,(not the case in the region)
Central Government	Land Reclamation and conducting mega projects	Release the pressure from the land in the Nile Valley	Expanding the inhabited area of Egypt to 25% instead of 5%	Highest power
MOA	Land reclamation and enhancing cultivated areas	Increasing the cultivated area of Egypt	Establish a food security status and self sustained production of crops	Affiliated to central government, hence, subject to its decisions
MOWR	Drilling out water and rationalizing its use	Securing enough water resources	No clear vision, mainly following the government visions	Affiliated to central government, hence, subject to its decisions
MOTM	Construction and operation of road networks and Railways	Achieving accessibility to all possible development locations	A coverage of road networks transversally and longitudinally on both sides of the Nile valley in the Desert Hinter land, to widen the inhabited area around it	Affiliated to central government, hence, subject to its decisions
Provincial Governments	Different roles, mainly regulating, mobilizing resources and lobbying	Mostly follows the government's agenda focusing on agricultural development	Visions vary in detail but mainly the same outline of the government's vision	Provincial governors posses political powers, should they be used correctly.
Local Governments	Same as provincial government but on a lower level.	Same as the provincial government	Same as the provincial government	Limited powers, because of limited resources and funds.

Table (8-7) Powers, roles, interests and visions of actors involved in the agriculture activity

From the positions of actors illustrated in the previous overview and graphical representation, the following aspects could be concluded:

- *The central government* with its affiliated ministries, consider desert land reclamation on top of their agenda, yet despite giving a strong support to the study region they are directing most of their investment to new sites such as Toshka, with some exceptions in the areas south of Baris e.g. Darb EL Arbeen. Because of media coverage of the interventions done in new places- including dedicated pages in daily newspapers for these projects- and that they seldom mention the interventions done in already existing places, most of the private investments heads for the areas of the most publicity.

- The positions of *the governors and mayors* differ in relation to the agriculture sector among the settlements of the region. ,For example, the mayors of the settlements in the New Valley governorate supported the farming activities and even lobbied for the migrant farmers and granted them the right to water. As such, they used their political powers in favor of development to set pressure on the central government for support, because they were interested in supporting rural development. However, the mayor and officials of Bahareya do not necessary have the same interests as those in the New Valley, where they consider the migrant farmers an illegal population, where some managed to get some rights while others are still suffering.

- For *the investors*, they head to where the government supplies them with incentives and support like Toshka. Only local investors would invest in reclaiming lands with perhaps few cases of investors from else where in Egypt. Despite that they have financial powers; investors outside the region do not currently have any clear interests. The same position applies as well for NGOs.
As for the visions of these actors, most likely they do not have clear visions of the future with the exception maybe of the government that have the general national vision for all of Egypt.

- The migrant farmers might be the other group of actors who have a clear vision of what they want, that is simply a decent life with better living conditions and the possession of their own cultivated land, they have the highest interest but not power.

Based on this discussion, agriculture can be argued a sector to be considered within regional development schemes involving networking and establishing networks in the region. This is to be based on the potentials of this sector in which many of the population are involved in, while taking into consideration the existing functional relationships in the southern group of settlements that could be further promoted to a functional network.
However, the main constraint is the shortage of water or in other words the uncertainty on the existing amount of water to be used in this sector, which requires a careful and innovative intervention.
 Finally, there is no networking between the actors of the region in regards to agriculture, with the exception of the Frafra case. This is an obvious case of social networking between the migrant farmers, and the cooperation in dragging the attention of the local and provincial governments to their cause, which later transformed into a case of co-production as discussed in chapter six.

8-5-4 Higher education

As mentioned earlier, higher education is considered a regional service, which actually does not tangibly exist in the region itself. But, since it exists in neighboring provinces in the Nile valley, some sort of regional relationship evolved between the study region and other areas causing a regular interaction in that regards.

According to the reflections of the interviewees in chapter seven, education was considered a possible activity to be included within a regional network. Therefore, the construction of a university to serve the region was proposed. However, according to the reactions obtained from the field trip in spring 2006 a different perspective was realized.

The Needed type of higher education

In principle, the construction of a University in the study region is not a new idea; it has been acknowledged for construction in the city of Kharga and noted down on the official land use plan of the city since the 2000s[135]. However, because of insufficient funds the work has not started yet, owing to the fact that there is no striking necessity in terms of a large population with a strong percentage of students seeking higher education (the

Fig. 8-32: Relationships between the study region and the Nile Valley

population of the whole region is merely quarter of a million), there were no attempts to begin with the construction.

As such the idea of establishing faculties that could be affiliated to other Universities in the Nile Valley was proposed, especially when the model is used in different parts of Egypt and even in Kharga itself with the existing faculty of pedagogical science that is affiliated to Asuit University.

During the field trip in spring 2006, the idea of establishing certain faculties was discussed with some interviewees (mainly local officials). Several opinions were in favor of establishing a faculty of agriculture, as it would support the commonly spread agricultural activity in the region, since more professionals are needed to regulate this activity than any other activity. It should also be taken into consideration, that the role of agronomists in past development attempts of this region was significant especially in the 1960s, hence, adding another justification for the attention to this specialization. This call for establishing a faculty of agriculture in the study region is substantiated with the arguments raised earlier by the SWOT analysis, with the shortage in regional research centers as a weakness.

Other types of education

Other types of higher education and more practically technical education could be proposed in the region based on its assets; among these types tourism and archeological education should be considered. This argument could be substantiated by the previous analysis of tourism that already capitalizes on the rich heritage of monuments and archeological sites, hence,

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[135] In end of 2002-early 2003 the researcher was among the planning team for upgrading the city of Kharga and even visited the location of the proclaimed university.

introducing education in the disciplines of tourism and archeology would be considered as a support service for the growing activity of tourism.

However, with the preliminary reactions on the idea from the people in the region, its implementation would not be as urgent as agronomy, perhaps it could start from a smaller level and grow according to demand.

8-6 Possibilities for regional networking and networks

This chapter identified the existing relationships in the study region and defined them according to two sets that exist within the regional space:
- The physical relationships, which included natural elements and the built environment with its three sub-categories of human settlements, infrastructure and utilities.
- The social relationships, which included the human and cultural relationships, the social regional services and the administrative relationships.

While investigating these relationships, it was possible to identify the regional clusters of assets that each of the categories, within the sets identified above, contribute to. Consequently these assets are considered in the next chapter that suggests a scenario for networking and networks in the case study region. For example the natural, historical and cultural assets are considered important elements in establishing tourism based network in the region, while the quality of infrastructure (another cluster of assets) determines what is needed to be enhanced in order to have a proper physical network that serves the functional networks in the region.

The chapter investigated the sectors of activities that were suggested by the interviewees in chapter seven, which included tourism, agriculture, mining and education, to be considered as the bases for functional networks in the study region. The analysis was done, keeping in mind the three layers of regional networks discussed in chapter three.

It is concluded that tourism and agriculture are possible bases for functional networks, because of the already existing relationships within the settlements of the region related to these two sectors, which could be further developed into networks. However, when it comes to relationships between actors, it is argued that tourism has already informal relationships and networking between some of its related actors, which could be further developed into an actor network. As for agriculture, there is almost a lack of actors' cooperation among all involved groups, with the exception of Frafra. This lack of cooperation among the actors is considered a constraint that should be tackled, if regional networks are to be established.

For mining, it is found that at the time being it is difficult to consider this sector as a main element within a development scheme because of the ongoing problems and obstacles related to it, however, it should maybe still be considered as a secondary sector in the region, while tackling its problems. And for education, it could be considered as a supporting regional service for both agriculture and tourism, perhaps by establishing specialized faculties or schools.

It should be mentioned at this point that such functional approach, has its limitations in the study, as it focused on investigating complementing activities within specific sectors. Despite that the relationships between the different actors were discussed and taken into consideration, other aspects were not firmly considered such as the cultural and social dimensions within this context, which could have pointed out to other sectors of activities that are based on such dimensions, possibly religious activities or social activities related to tribal effects, if they exist. However, due to time limitations and the interdisciplinary nature of such aspects, it was difficult to include such possibilities within this research.

IX- A Scenario for Networking and Networks in the Western Part of Egypt
An Application to the Case study region

9-1 Introduction

The previous chapter identified the sectors of activities that could be incorporated in establishing regional networks, which are mainly tourism and agriculture.

Based on the three layered framework of actor, functional and physical networks, discussed in chapter three, the study verified the existing elements that would form these layers in terms of positions and relationships among relevant actors, existing functional relationships of each activity sector, and the current situation of the existing physical infrastructure.

This chapter attempts to introduce a scenario for regional networking and networks in the region by developing the existing relationships and fulfilling the missing links and elements in the framework mentioned above. The intended scenario of the regional networks would have a strong spatial dimension; this is because the proposal of regional networks capitalizes intensely on the spatial assets of the region, in addition to other regional clusters of assets. As seen from the previous chapter, these assets are clearly manifested in:
  - the natural elements of the desert and its topography,
  - the green fields with their irrigation systems and lakes,
  - the cultural and historical architectural heritage of the region,
  - the settlements' fabric and their desert architecture,
  - and the existing physical infrastructure.

Such a scenario is argued to have direct spatial impacts on the region. This is because the proposed regional networks are set within specific spaces in the region, which are defined physically through a series of key projects that identifies the spatial dimensions of these networks, thus transforming the space that they will occupy into places. In addition, these interventions, would positively affect the spatial assets, by enhancing their current situation.

This is done while stressing the importance of involving all related actors in formulating a future development vision for the region. It is also argued that government intervention is still highly required, possibly in a scheme of co-production, to present an incentive policy based on local assets and to ensure the legitimacy of the networks. As discussed in chapter five, with the current transformation in the Egyptian system, there might be a possibility in combining networking with the hierarchical system. In such away that networking will be the approach for development, which includes all related actors, while the support for projects would come through the hierarchical system, similar to the case of MISR program. With these aspects in mind together with the key conditions and success factors of regional networking and networks, discussed in chapter three, this chapter commences by defining the two possible networks within the region. It then attempts to define key strategic projects that could realize them, according to the three layered framework, the layer of functional networks (middle layer) and highlights the setting up of the actor networks (first layer).

It also discusses the fulfillment of the missing elements in the existing physical infrastructure, hence realizing a physical network (third layer) to support the regional networks.

Taking into consideration the success factors that should be provided to the actor networks, the chapter then proposes an intervention within the existing Egyptian system to involve the related actors together with the local and provincial governments, while showing their relation with the central government. The study then investigates the further spatial impacts that can take place should the proposed regional networks are implemented.

9-2 Possible networks in the region

Based on the discussion and the analysis in chapters seven and eight, it is argued that two possible networks can be currently realized in the region. These are a tourism network and an agriculture related network. As discussed earlier, these networks are established based on the regional clusters of assets, more specifically the region's spatial assets.

Accordingly, the main objective for establishing these networks is to achieve regional development, which would carefully use the opportunities generated by the above assets, while maintaining them, and emphasizing on their values and meanings.

These networks are discussed in the following sections by first describing each of them, then showing the settings of the actor networks that would mobilize them. This is followed by the possible strategic projects that would realize the functional networks, while the physical networks, which would support them is discussed later as a common element supporting all the networks in the region.

9-2-1 The Desert Loop: a space for tourism

This network is based on the existing attractions, either ancient monuments or natural and ecological sites.

These represent the natural, cultural and historical assets of the region, discussed in chapter eight; this network could be called the *desert loop*. This expression is coined based on the actual route that is taken by tourists and visitors in general for visiting the Western Desert oases, through the regional road starting from Giza in the North passing through Bahareya, Frafra, Dakhla, Kharga and finally to Asuit in the Nile Valley. In addition to this road there is another regional road that links Luxor to Baris Oases, which leads to Kharga, together they can be called the desert loop. The reason for giving this name to the region is to create an image or a metaphor for the space defined by this intended network, to help in its marketing, as discussed in chapter three.
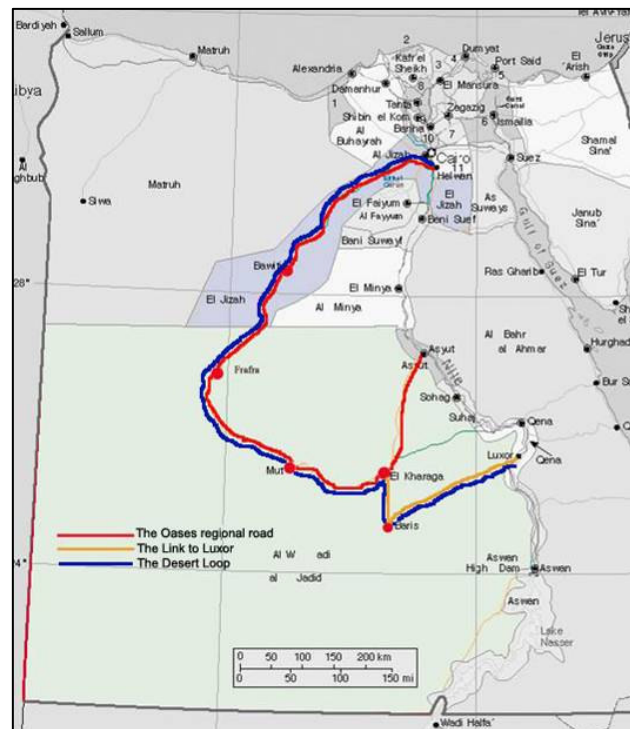
Fig.9-1.The Desert Loop (Adapted by the author)

Accordingly, the tourists come either from the North, starting from Cairo and Giza passing by Bahareya, Frafra, Dakhla and then either end the loop by going to Asuit or continue through Baris then to Luxor, which is usually the case. Or, the other alternative is to come from Luxor, where there are tourist packages that include the desert oases with Luxor, in that case, the tourists would pass through all five locations and end up in Cairo.

Digital evidence

Currently this loop is mentally recognized through the collective experiences of local and international tourists passing by. This argument is substantiated by interesting evidence from the internet, which is unintentionally realized through Google earth.

This tool in addition to its provision of satellite images and maps of the globe also has a related community called "Google Earth Community" (GEC).

Through this community people can enter comments on the different places shown on the satellite images, in most cases they enter comments of their own experiences in these locations and sometimes substantiate it with photos taken on location.

Eventually, many entries were found on the GEC on the level of settlements in the study region, highlighting many of their important attractions and other supporting facilities such as hotels and tourism centers.

On zooming out to have a general look of the region, these entries are linked together to form the loop, as illustrated in the opposite figure.

It is important to mention that this part of Egypt was not covered by Google Earth until July 2006; since it is a very recent tool. This illustrates the short time through which this loop became evident online,

Fig.9-2: A screen shot from Google Earth showing the Desert Loop, note that the track linking the loop together was identified by the GEC.

which in turns reflects that it has been recognized and mentally situated by people from around the world, since many of the entries for the region is done by foreigners.

A Fragile network?

There is, however, one major aspect in regards to setting up a tourism network that is tourism might be considered a fragile industry.

Several opinions consider tourism subject to many external and internal conditions of stability. A clear example to the sensitivity and fragility of tourism could be given by the terrorist attacks in Luxor in 1997 which for more than one year caused massive losses in the tourism sector. Later, in 2000, the tourist inflow was affected to a certain extent by regional conflicts namely the start of the second Intifada in neighboring Israel and Palestine and to a lesser level in 2003 during the second Gulf War. These external effects are considered among the threats to tourism as shown in the SWOT analysis in chapter eight.

However, in relation to this aspect two main arguments could be given to substantiate the creation of such a network:

- First as tourism is considered an unstable industry with varying moments of strength and weakness, the bases supporting the tourism industry are of a continuous importance including both attractions and facilities. These should be maintained continuously, with the reasoning that maybe at some moment tourism could slow down; however, when it recovers it needs this base to function. Hence, a network of tourism incorporating attractions, lodging and other facilities represents this base.

- Second, terrorism and conflicts have recently *turned into a global phenomenon*; in 2004 and 2005 a series of bombings took place in Madrid, London and Sharm El Sheikh (Egypt), illustrating that these attacks are not confined anymore to a specific

region but they can happen anywhere. Eventually tourists, despite these events, continued going to the three destinations[136].

There is another aspect about fragility, when tourism is concerned, which is the fragility of the natural assets and the cultural heritage assets in the region that could be negatively affected, by tourism activity. One shape of tourism is the Fordist mass tourism, which is based on the flow of large quantities of tourists to the area of attraction; this would consequently result in many negative impacts on the existing assets of the region[137]. Accordingly, the intention of the intended network is not geared to tourism in this form, but rather to tourism that would maintain the spatial qualities of the region.

One network and three packages

The tourism network of the desert loop would include the five groups of settlements in addition to the cities of Giza and Luxor in the Nile Valley since they are the main source of tourist flows and the gateways from the Nile Valley to the region. This was identified as an opportunity to the region in the SWOT analysis discussed in chapter eight.

As illustrated in the previous chapter the tourists either visit the whole region, or in most cases they would visit the Northern groups of settlements or the Southern groups of settlements each at a time.

Accordingly, three tourism packages could be proposed through the loop and linked to the already existing traditional packages offered in Giza and Luxor.

The first package would be linked to the packages of visiting Giza with its pyramids and sphinx to include the Bahareya and Frafra groups of settlements and their attractions.

Fig.9-3. The Desert Loop and the three packages

The second package would be linked to Luxor (which in many cases is in itself part of a package with Aswan) to include the three groups of Baris, Kharga and Dakhla and their attractions. Finally the third package can start from Luxor and end in Giza passing through all five locations in the region or vice versa. The first two packages are already taking place as shown in chapter eight, and already some tour operators started to promote the third package[138].

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[136] In a TV interview with two British tourists who were in Sharm El Sheikh during the bombings of 2005, they were asked if they are going to interrupt their holidays and go back to England they replied that they are not thinking of doing that simply because two weeks earlier London suffered similar bombings hence, " The Bombs are their too". Of course some tourists eventually left, but in comparison to earlier events, other tourists stayed and others carried out their plans for visiting the region.

[137] This is based on the lectures and discussions with Prof. Flavia Martinelli at the University of Newcastle upon Tyne in 2003.

[138] http://www.min-travel.com/egypt_land_tours/western_desert_oasis_safari.asp, April 2007.

A similar concept was proposed during the regional studies for both Quena and Aswan in the MISR project that was presented to the UNDP in December 2006. A functional tourism network was suggested as part of the development strategy, which would include the settlements of Kharga and Baris together with Luxor, Aswan, Abu Sinbel and Quena. This is based on the diversity of monuments in these sites and the large annual pool of tourists that head to Luxor and Aswan[139]. The network is supposed to gain from the opportunity of the diversity of existing attractions, and the existence of reasonable physical infrastructure including airports and support services for tourism in Luxor and Aswan. The proposal also recommended some interventions to enhance the existing physical infrastructure.
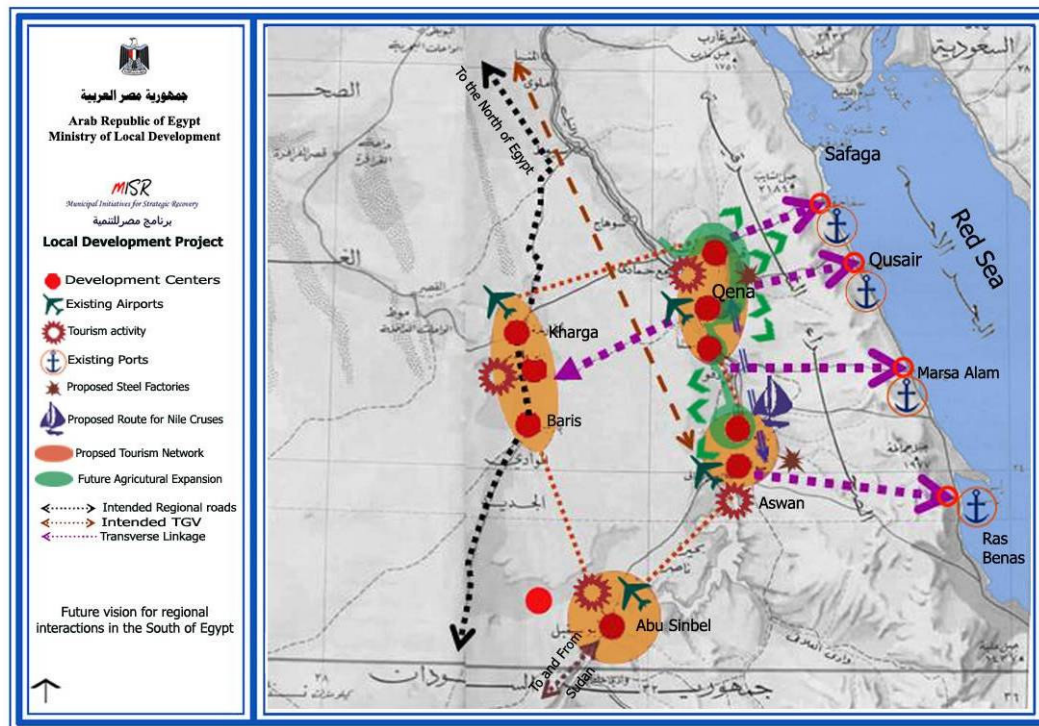
Fig.9-4. The tourism network proposed through the MISR project which includes the settlements of
Kharga and Baris in the region together with other famous cities in the Nile Valley

Therefore, the above proposal could provide an interesting support for the intended tourism network, in terms of further expanding it to the rest of the study region.

It is also argued that by including cities in the Nile valley which are considered an annual pool of tourists to this network, a considerable competitive status could be established to respond for the threats imposed on this region by other famous tourist destinations in Egypt as highlighted in the SWOT analysis in chapter eight.

At the same time, since this idea was proposed earlier, it might establish some familiarity to the concept within related governmental levels, provided of course that they seriously consider the outcomes of the preliminary phase of the MISR project.

Elements of the loop
The tourism network is based on some main elements, these are:
  - The natural, cultural, historical and spatial assets, explained by Friedmann (2006) in the region, which are the existing monuments, attractions and ecological sites through the different groups of settlements, that form a network of diverse attractions.
  - The actor network (first layer) that is considered the driving force for such a network.

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[139] As part of the team working on this project at that time I had the opportunity to actually suggest this network and include it to the report presented to the UNDP which later presented it to the Ministry of Local development.

- The facilities and activities related to tourism, as explained in the existing relationships for the region in terms of hotels and tourists' services and the complementary role done between this set of elements and the above one, discussed in chapter eight, which, according to the three layered framework, would form the second layer.
- Finally the physical networks, the third layer, and their main role of connecting the settlements of the region together on one hand and to the rest of the country and the world on the other.

The actor network: a development agency

This is the first layer of the three layered framework, which would be responsible for setting the visions and strategies for the tourism development of the region, and deciding on the key strategic projects that would realize the tourism network. It should also have the role of a development agency that forms pacts and reaches for agreements to ensure the implementation of its strategies.

This section only identifies the actors involved in this network, based on the analysis done in chapter eight. However, the mechanism and the dynamics of the actor network and its relationship with the regional and central governments are discussed in a later section of this chapter, since the same arguments are valid for the actor network related to agriculture, which is reviewed later.

The actors involved in the network could be divided into: the civil society, the government agents and the representatives of the civil society to the provincial and central governments; these are discussed briefly as follows.

-The civil society

These would consist of actors who are not affiliated with the government, and would include: hotel owners, tour operators, investors and entrepreneurs, and others relevant to tourism activity.

Since the hotel owners are highly interested in promoting tourism and are currently involved in cooperation together, among them could be initiators for possible projects and interventions, possibly the hotel owners who started their activities as early as 20 years ago building the tourism activity from scratch and are highly enthusiastic to further develop it.

The investors are also important actors since they would partially provide the financial means for tourism development, while the tour operators can directly contribute in introducing the packages illustrated in the loop and marketing for them. However, they should be willing to get involved in the process and convinced with its feasibility.

-The government agents

These actors reflect the levels of local and provincial governments which would consist of the Mayors of the cities and the provincial Governors in addition to the representatives of the related departments in both levels of government, and related representatives of the local executive committees (the representatives of the line ministries in the provinces).

The governor and mayors could actually provide the driving political power to this network, in particular the governor, provided that he is convinced with the purpose of such network and having a dynamic character, which can even allow him to be the director of the network.

The governor should be convinced by the actors of the civil society but also through the mayors of the cities. In the case within hand, the mayor of Frafra is highly dynamic and enthusiastic to promote his city as he already invited international investors. He could be an example of a key player in convincing other actors including the governor with the importance of a network, and would even stir up development ideas.

The representatives of different departments would be the link to formal bureaucracy in terms of legal aspects, permits and local funding.

- The representatives of the civil society to the government
These actors are of the civil society and they would be mainly the representatives of local councils and members of parliament (MPs) for these settlements. Where the MPs have considerable political powers at least in taking major issues to the parliament and lobby together with the governors and Mayors, as illustrated in the case of the migrant farmers in Frafra and the support they got from the mayor, governor and the MPs, which solved many of their problems. There could be other actors related to this network, such as Dr Zahi Hawas, Egypt's top archeologist. He has international fame and managed some years ago to drag the attention to Bahareya, as mentioned earlier, based on his personal connections. He is at the same time the head of the Egyptian council of antiquities, hence, possessing certain political powers.

Another actor group, who should also be involved in such a network, would be the ***planners***, who would help in defining the main development strategies and defining key projects for its realization. Examples of these key projects that could be proposed are discussed as follows.

Key projects to define and design the Desert Loop

These projects are proposed to be implemented along the five groups of settlements that are forming the desert loop, at the locations of different attractions as a way to further define this loop while building a spatial image for it, thus realizing the second layer of the framework.

These projects vary from one location to the other and from one attraction to the other. Based on the existing natural and cultural assets of the region, six types of projects could be highlighted as examples for such interventions. However, it is not intended to go into detail in each of these projects as that requires further research; the aim is rather to give a brief explanation of possible spatial interventions to materialize the desert loop.

1- Revitalizing the vernacular housing stock

A common feature in all settlements is the vernacular housing that is largely deserted since the mid 1990s, discussed in chapter eight, and considered among the cultural assets of the region. With this relatively abundant housing stock, its reuse could still be possible for the purposes of lodging tourists. This also helps in tourism development, by introducing a new exotic attraction in experiencing the traditional life in the oases. There is also the possibility of reintroducing a modern desert architecture based on the traditional architecture in the form of housing compounds, which could lodge tourists, and also local people.
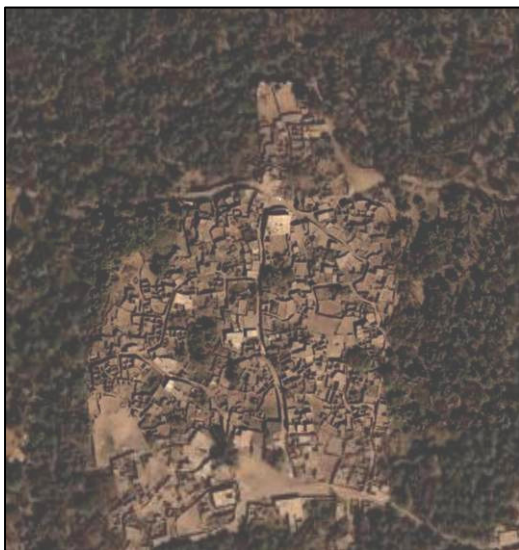
Fig.9-5: Vernacular housing in Bahareya

Fig.9-6.Narrow allies in the vernacular housing of Baris

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[141] http://www.arabworldbooks.com/new/ecolodge.html , April 2007.

A similar project has been carried out in Siwa oasis in the North West of Egypt; the so called "Eco lodge". It consists of a series of traditional Siwan houses that were restored and reconfigured into rooms to host tourists, which are all furnished with local material[141].

The founder of this lodge Dr. Mounir Nematalla states that this contribution mainly achieves an eco-sensitive sustainable development in this oasis. It is directed towards those who are interested in indigenous culture and love of nature, hence, creating a real time experience for the seekers of this oasis. Similarly, if this intervention took place in Siwa why can't it be replicated it in the oases of the study region.

Fig.9-7. Top: Some converted houses of the Eco lodge of Siwa.
Right: an Ariel view of the location.

2- Path definition and design for ancient monuments

Ancient monuments are present in at least four of the five groups of settlements, and in many cases they are included in the visits organized by the tour guides. However, in most cases, the paths to these monuments are neglected together with their surrounding spaces; therefore, one of the possible projects would be the definition and design of these paths and spaces.

This could be done through the space design along the intended path to host the different activities that compliment the sight seeing of monuments, e.g. souvenir shops, bazaars, etc, hence tempting the tourists to spend more time in the environs of these monuments.

Clear examples could be illustrated in many temples existing just outside the settlements, with almost no development along the way to them. In some cases, their accessibility is only possible by land rovers; hence the necessity for roads arises to facilitate the visits.

To name a few, the ancient temple close to the village of Doush in Baris, the temple of Hibis and Bagawat ruins in Kharga, which are shown in the following figures.

Fig.9-8: The temple of Doush outside the village, with no activities or development along the way leading to it or even in its surroundings. Right: A view of the temple that was recently maintained.

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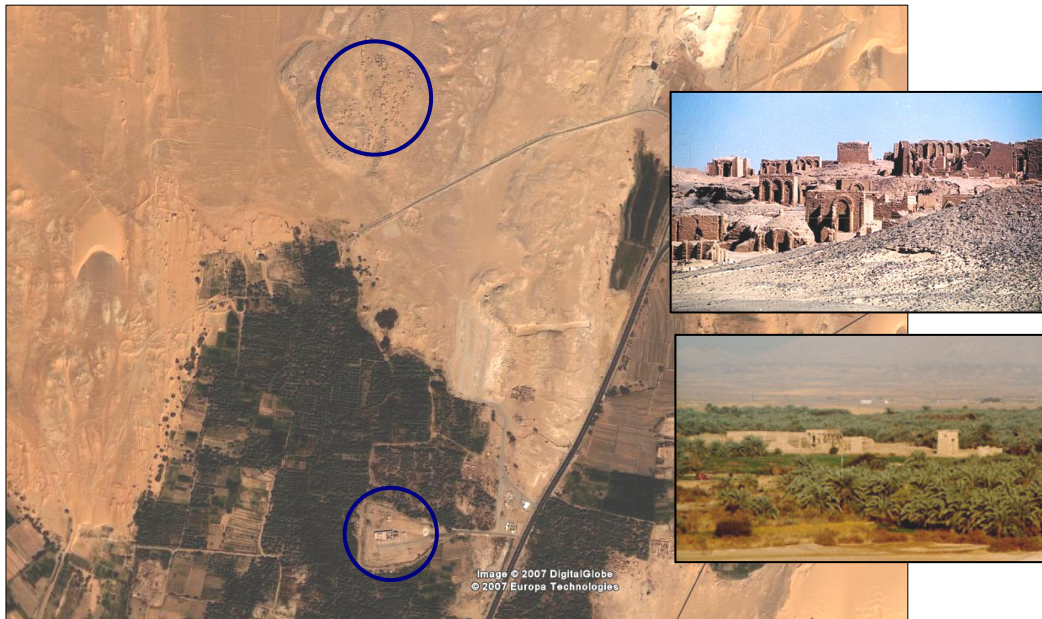
Fig. 9-9: The temple of Hibis next to the Bagawat Necropolis in Kharga with not no intervention to define the paths to these sites and their surrounding spaces, and also no attempt to establish a path linking both sites together

Eventually, the path and entry development to these sites and treatment of their surrounding areas could be done through limited interventions that would involve landscaping and space design projects. These are similar to those done in other parts of historical sites in Egypt or the world such as the area surrounding the temple of Luxor.

However, the scale of these interventions should be proportionate to the tourist influx to the region and its prospected gradual increase, thus, limited interventions should be considered rather than large scale ones.

Fig.9-10.The Temple of Luxor and the intervention in defining the transition space from the Nile and from land

3- Defining and designing natural protectorates

In acknowledgment to the fact that some locations in the region are rich in natural assets related to the desert context, discussed in the previous chapter, the proclamation of some of these assets as natural protectorates should be done.

From experience during the field visits, these sites already receive small numbers of visitors since they are not well known yet. Eventually marketing and publicity actions are required.

However, they also need regulations to conduct a sustainable eco-tourism, this is

Fig.9-11.Formations in the White Desert near Frafra

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because tourists usually violate these sites and their natural formations by taking some items as souvenirs. This was noticed in sites like the Crystal Mountain and the desert rose sites.

These protectorates will also require tourist services. Accordingly the spaces which they will occupy, would need some intervention to carefully articulate the spatial relationships of the sites of these services and other possible activities taking place in the protectorate. It is also possible to introduce tourist rest houses and other crafts

Fig.9-12. The Black desert in Bahareya

and souvenir centers at the edge of these locations, which is the case in several other places world wide, such as the Grand Canyon in the United States.
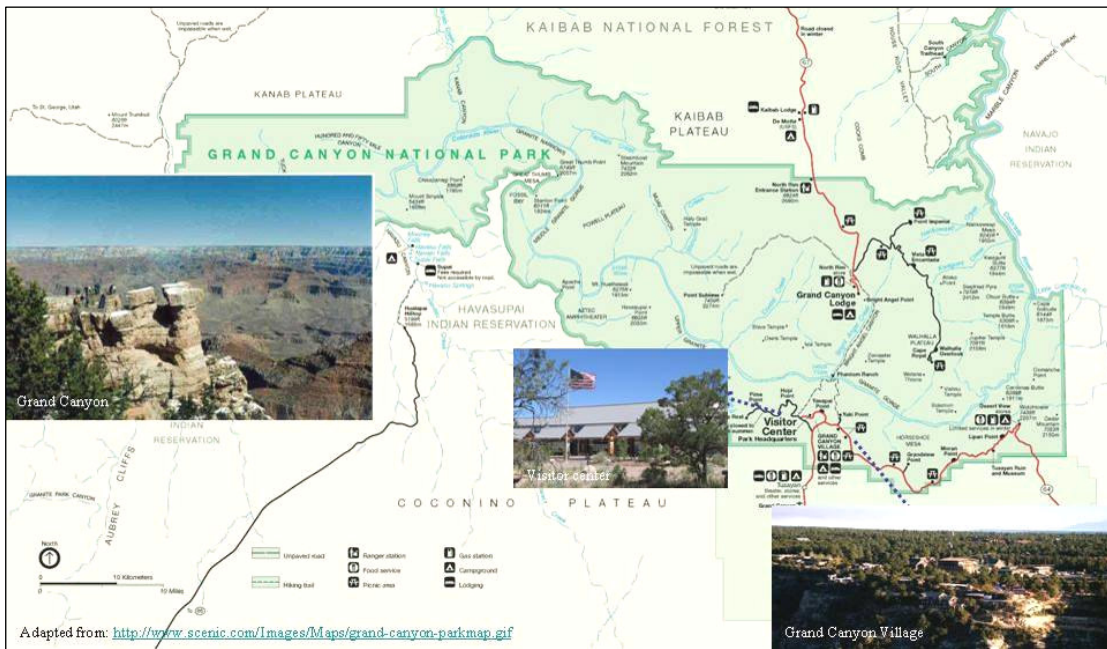
Fig.9-13.The example of the Grand Canyon, where at the edge of the natural site, tourist services in the form of a visitor center, a lodge and an interactive village were constructed

4- Defining and designing heritage sites

As indicated in the SWOT analysis, among the weaknesses in the region is the violation of ancient districts by local population, which is clear in the district of Sendadeya in Kharga.

Despite the presence of a law that prohibits the demolition of buildings over 100 years, the district is being slowly but surely razed to the ground and replaced by modern buildings, as the city officials are not aware of this law or ignore it.

Fig.9-14.The narrow alleys of El Sendadeya in Kharga and Quasr in Dakhla

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Other sites such as the village of Al Quasr in Dakhla is deserted, but is visited regularly by tourists, while facing problems of deterioration and negligence.

it is argued that conservation projects should be applied to these sites proclaiming them as heritage sites and open museums. On one hand, to preserve the cultural assets of the region in the form of its physical heritage, and on the other, to capitalize on these cultural assets, through inviting tourists to experience how life was in the past.

This should be done side by side with awareness campaigns on the local level to inform the local population of the importance of these sites as an asset that could be used for regional development.

Similar interventions have been made in different locations world wide for example the city of Carcassonne in France which is a medieval city that had been announced a world heritage site rich in its patrimony of a medieval fortress[142].

Fig.9-15.The town of AL Quasr (above) is one of many locations of medieval sites; in this case many of the houses are in moderate condition. However, in other locations such as the Rashida village in Dakhla (below), most of its houses are in ruins.

Fig.9-16.The City of Carcassonne in France which is a medieval world heritage site, a similar intervention can be done in ancient sites in Egypt

This is a case closer to the village of AL Quasr which had a similar function in medieval times in Egypt. Hence, if it was possible to declare a medieval city in France as an international heritage site protected from any violations, it is possible to do the same to the medieval site in one of the oases of Egypt. It is not necessary to claim a world heritage site status for these sites, but it is a must to declare them as Egyptian heritage sites that should be conserved and protected from any violation.

Similar to the previous projects, the heritage sites will require some arrangements in terms of supporting facilities and tourist services, accordingly space design for the locations of these services and their relationships with the heritage sites and monuments will be needed.

5-Handicrafts centers

Local handicrafts are found in different locations in the region with different products that usually exist in one or two settlements of each group. Accordingly, stressing the importance of these crafts as assets for tourism is important, hence proclaiming these settlements as contextual handicraft centers and supporting them with necessary publicity and support, would be of an interesting contribution and another attraction element of tourists.

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[142] http://www.carcassonne.org/carcassonne2.nsf/vuetitre/docPatrimoineCite1 , April 2007.

The locations of these centers are of two types:

The first being located in a major city or in its vicinity, such as the already existing pottery centers and museums in Kharga, Bahareya and Frafra, thus they are considered an asset to the main city.

They could also exist in the villages of a specific group and close to the main settlement such as the folkloric clothes village in Bahareya, which is a craft done by local women.

The second type is found along the route from one city to the other as in the case with Kharga and Dakhla with villages hosting these

Fig.9-17. Handicraft center and a museum in Frafra, also known as Badr museum for pottery

handicrafts acting as stops along the way, hence fortifying and defining this part of the loop. For example the:

- Arabesque school in one of the villages which is based on processing wood out of the palm trees into different designs, however these designs seem a bit monotonous and sometimes naïve, which would benefit therefore of giving support to this village by establishing a crafts center including training for better designs and products.
- Local carpets and textiles center, in another village, mainly powered by local girls.

A similar concept is found in Vietnam in the so called "Craft Villages" where villages are specialized in different handcrafts and provided publicity by the state[143].

6- Springs and sand spas

A common feature in the region is desert and sand.

In some places of the region treatment from rheumatic problems is done by sand baths, with the concept of using the warmth and heat of the sand by burying the whole body but the head in the sand; a process that is slowly gaining popularity, even by international tourists.

Accordingly, introducing "Sand Spas" could be of an added value to the region. It is to be mentioned that the Mayor of Frafra was negotiating to attract Italian investors to set up such a spa in 2006.

Some locations in the region are famous for their warm mineral water springs; in Bahareya and Dakhla attempts were made to start tourist compounds using these springs as the main feature (figure 9-19), this could be further developed to reach the level of health spas.

Fig.9-18.Sand baths are gaining popularity by both local population (below) and tourists such as Germans (above)

[143] http://www.vnviews.com/vietnam-travel-misc/craft/Vietnam-The-Craft-Villages.php , April 2007

Fig.9-19.The "Hot Spring Hotel" in Bawiti city in Bahareya is based on warm mineral water coming from a hot spring in the mountain next to it. It has been co-founded in the 1990s by a German who moved to the Oases and runs the hotel.

The locations of the projects discussed earlier are roughly pinpointed on the following collective map.

Fig.9-20. Key strategic projects to realize the tourism network

9-2-2 The New Valley: a space for agriculture

As discussed in the previous chapter, the southern group of settlements: Dakhla, Kharga and Baris together with the city of Asuit in the Nile valley, have existing functional relationships that could be further developed into a network. However, this is not the case with the two groups of settlements in the North, which lack this type of cooperation between them. Bahareya depends on Giza to obtain its needs from fruits and vegetables, while Frafra, though it belongs to the same province as the southern group, does not have a direct relationship with them in terms of agriculture related activities.

Therefore the proposed intervention in the region would be in the southern group aiming to promote it into a network, while further intervention could be done to establish relationships between Frafra and Bahareya on one hand and Frafra and the Southern group on the other.

The New Valley: an agriculture related network

Since the settlements belonging to the proposed network belong to the New Valley governorate except Asuit, the same name is adopted that is the New Valley Network. The main reason for doing so is to adhere to a known name which could be used in marketing the network, hence creating an attractive image, as discussed in chapter three.

Similar to the Desert Loop, the New Valley defines a specific place in the region, which would be spatially structured by the key projects, green fields, irrigation systems and infrastructure networks.

The main role of this network would be the integration of agricultural activities based on their exported products and imported needs. As such the relationship that would govern these settlements will relate to the scheme: Cultivate-Process-Market. The main roles of the cities in this scheme acknowledges the existing relationships but making these roles well known and well defined to different settlements.

- Cultivation

Basically all the settlements are involved in cultivation, with dates being their main crop, while fruits and vegetables are cultivated in Asuit.

- Processing

The city of Kharga is currently the processing point for the date crops out of other settlements in the region in its factories. This role could be further developed to include other crops and products of the other settlements.

Fig.9-21.The proposed agriculture network
Source: Adapted by the author.

- Marketing

Kharga and Asuit play the main role in marketing, for Kharga it could be considered a collection point for the processed crops - in its factories- of the three settlements before marketing them in Asuit through which the products are sold where needed products from Asuit are bought for the settlements of the region. Thus these two cities can play the role of a market place.

In addition to these three aspects, research cooperation is considered as a supportive activity to this agriculture network in terms of finding adequate crops to cultivate in desert areas and appropriate methods for using water.

However, some interventions need to take place in terms of the physical infrastructures and transportation modes to support this network; this is discussed in later sections.

The northern settlements

Despite the separate situations for both Bahareya and Frafra, the possibility of linking them in cooperation with the New Valley network exists especially for Frafra and to a lesser level for Bahareya.

-Frafra and the New Valley network

It would be possible for Frafra to join such a network through Asuit rather than the settlements of the region. In that sense it would directly deal with it as the marketing center, since Asuit would be closer in distance to Frafra than to Dakhla if the transverse link road joining the two cities is finalized.

However, for such an alternative to take place the processing of crops from Frafra should be either done in Asuit directly together with their marketing or processing factories could be built in Frafra.

-Frafra and Bahareya

The other possibility which could involve Bahareya, is to start a relationship between the two settlements in the same way as the one in the southern groups. Thus the crops of Frafra get processed in the factories of Bahareya and then marketed in Giza with the products of Bahareya. This allows for the establishment of a strong relationship between the two settlements and with Giza.

Fig.9-22. The Possible link of Frafra with the New Valley Network through Asuit

The main obstacle that might prevent this cooperation is that Bahareya belongs to a different province than the other settlements, therefore; the provincial boundaries should be reconsidered for modification.

The actor network: a development agency

Similar to the discussion done with the actor network for tourism; the actors that would be involved in realizing this network are categorized into: the civil society, the government agents and the representatives of the civil society to the provincial and central governments; these are discussed briefly as follows.

- The civil society

These include: local and migrant farmers, investors, and other related actors.

The problem is that for the *investors* they currently do not have sufficient interests for these settlements. But they do have interests in neighboring Toshka and East Owinat, specially the Arab investors. Thus, it is possible to invite these investors as observers in this network to get familiar with its potentialities and possibilities for investment.

Another interesting approach to involve them is through research activities, in the sense that the experimental farms existing in neighboring sites especially in Toshka could be invited to
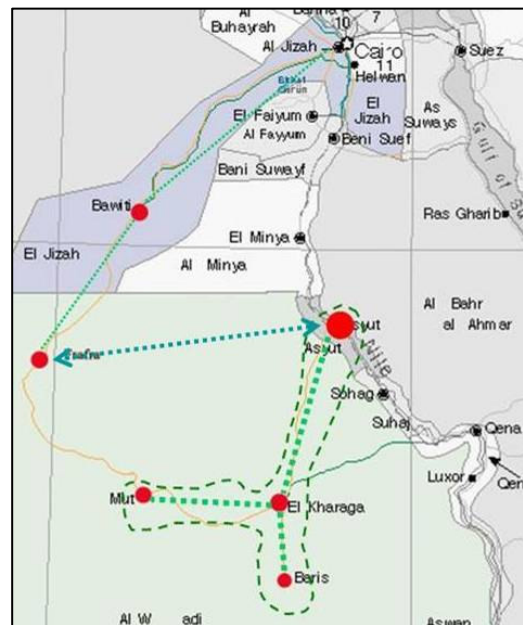
the network of research centers, eventually getting to know the region and drawing their attention towards its capabilities.

For the Farmers, they are involved in two folds, both migrant and local farmers are interested in marketing their products and processing them, hence, they would be involved in defining the idea of regional markets, as it ensures fair trade to their crops. Yet, in particular the migrant farmers would be highly interested in terms of the intervention for water, while pressing the local governments in this direction, to support them, which had been done before in Frafra. They are also open for training and getting to know better ways of using water and adequate crops for their areas. During the field work they complained that they do not get any support from any agronomist societies, hence, they would be in support for possible training centers related to the network of centers for agricultural research.

It should be mentioned that despite they do not have political powers, the migrant farmers managed to lobby and convince the local government which took their matter to upper tiers through an arm twisting approach. Hence, collectively should they be organized they can replicate this pressure to reach for their aims, an issue that should not be neglected in the network.

- Government agents

These are indeed similar to the ones discussed in the tourism network, with the only difference being the representatives for the related ministries which in the case before hand would be the Ministry of Agriculture and the Ministry of Water Recourses.

The Mayors and Governors would play an important role in supporting the migrant farmers as seen earlier, should they be convinced they would lobby and press for state support for the proposed strategic projects.

In some cases it is up to the character of the governor to mobilize resources for his province. This was the case with the former governor of Alexandria, who managed to convince the businessmen and private sector to support his intervention in developing the city. Therefore, once more Mayors and Governors could be the main key actors in the network of using their political powers and lobbying capabilities to push forward for its projects and interventions.

It is important as well to include the Governor of Asuit, since the main regional market would be built there, hence, his support would be needed to acknowledge the process and push it forward.

Since intervention for agriculture comes in line with the state's policy in increasing the inhabited and cultivated areas of the country, its support should be gained to fund the key projects at least the intervention for water through its MOWR as the private sector companies can not handle it alone. Also the intervention of the state will be clear in regulating the cultivated lands and supporting its farmers through the MOA, similarly through the Academy of scientific research that would regulate the establishment of research centers.

In that sense the state should be convinced to invest in this development, this could be done through the governors and lobbying of the MPs similar to what was discussed earlier.

Representatives of the civil society to government

These would be similar to those involved in tourism network, which would do the same role.

As planners are included as actor group in the tourism network, they should also be included in this one, together with agronomists and possible researchers of agriculture and water resource management in desert areas.

These groups would help in defining the key strategic projects that would realize the layer of functional networks on the ground. Similar to tourism, such a network would grow into a development agency that is capable of making agreements and having sufficient power to realize the proposed key projects, hence, the objectives of the network.

Key strategic projects for the New Valley

In order to realize the agriculture network, it is necessary to intervene with strategic projects that physically define it. These projects are discussed mainly in relation to the proposed New Valley network in the south, then with other interventions that could stimulate cooperation through the settlements of Bahareya and Frafra.

1- Regional markets for agricultural products

As discussed earlier, the cities of Asuit and Kharga play an important role in this network in trading and distributing agricultural products. Through Asuit, the products of the study region are diffused to the Nile Valley and through Kharga the products of Asuit are diffused to Baris and Dakhla. Thus, there is a need to regulate this process and further define it on the regional level. This could be done spatially by constructing regional markets for agriculture products in each of Asuit and Kharga. Therefore, the farmers would have specific locations to sell their products and the markets would also act in setting proper prices for these products to protect them against manipulation. In reverse they will also be the destination for traders who would sell and diffuse these goods in either the Nile Valley or the southern settlements of the region.

At the same time, if a transverse road is constructed to link Frafra with Asuit, this market would also serve in selling the products of Frafra in the same manner discussed above. This would be a good facility for the farmers of Frafra who already have problems in marketing their products.

Examples of these regional markets exist in many countries, including Egypt itself. In the outskirts of Cairo El Obour regional market for fruits and vegetables was constructed in the 1990s to regulate the relationship between the farmers and traders coming with their products from the Delta to the Greater Cairo Region.

Fig.9-23.El Obour regional Market is located about 35 Km from the center of Cairo and is a daily destination for many producers and traders of vegetables and fruits.

The market did not only regulate the daily interactions between these people after being scattered in informal markets, it also played an indirect role in dragging the attention to that location outside Cairo close to the new city of EL Obour, hence the name of the market, as more and more people visited the market, they became aware of the city and its possibilities.

2- Regional agro-industrial complex

The main aim is to strengthen the relationship between the cities of Baris, Dakhla and Kharga, where all the date crops are processed in Kharga. This is done in few factories in the city with relatively old technology, and with almost no quality control. In that sense, upgrading of the procedure is needed specially when the date products are not only sold in Egypt but also exported to South East Asia, as mentioned by one of the city officials.

In fact exports and processing of larger quantities of dates exist in Saudi Arabia, with some companies exporting different qualities of dates, thus making a tangible business.

Fig.9-24 An agro-industrial complex could be a possible intervention in Kharga

This upgrading could be done to the already existing factories and increasing them in size should that be needed.

In that sense Kharga would be known as a regional complex center with its upgraded factories. Such a complex could be constructed to include also the processing of other crops; however, this could be decided only with sufficient feasibility studies in terms of the needs and gains for the cities of the region.

The same idea could be applied as well to Bahareya which part of its economy relies on date products and their exports, but also it could be further extended to include the products of Frafra as well, which does not have any processing facilities as discussed earlier.

3- Network of agricultural research centers

Despite the plans to construct a university in Kharga, nothing has been done so far, mainly because of budget reasons and the claims that the number of students who would eventually attend the university is relatively small.

As revealed from the SWOT analysis, a main weakness in the region is the lack of research centers related to agriculture and water management, which would help in better ways of using water and choosing adequate crops in relation to the existing water and weather conditions.

It is therefore argued that establishing such research centers is a necessity for this region. This could actually be achieved through introducing a main research center in Dakhla as it is the largest settlement in terms of cultivated areas, and a network of smaller centers (branches) in each group of settlements to act as training and information centers for local farmers.

The main center could thus be related to one of the universities in the Nile valley possibly Asuit, as it has a faculty of agriculture within the university and is also a destination for many students from the region.

It might also be possible to establish a faculty of agriculture in Kharga that would be a branch to the one existing in Asuit. This concept was introduced by many universities in Egypt by establishing branches of their faculties, for example the faculty of pedagogy in Kharga which is a branch of the faculty in Azhar University in Cairo.

4- Intervention for water

Since water is the vital element for the whole process, it is important to ensure its provision for all settlements. As has been revealed from the field work, the problem is in extracting water. Hence, drilling of deep wells is considered crucial for the agricultural activity to continue specially for the new reclaimed lands and expansion of agriculture by new migrant farmers, as seen from the case of Frafra.

Assuming the presence of a large reservoir of underground water, as mentioned in official government documents, though this needs further investigation, the presence of a body or a facility for well drilling and water management in a sustainable way is important. Currently, the government is the main body responsible for this process through the ministry of water resources, in addition to limited private sector companies, however not all of them have the equipments to drill deep wells.

It is thus important to introduce an organization with branches in all five groups of settlements in the form of a trust or a society, and possibly subsidized by the state to provide fast intervention when getting water

Fig.9-25.Drilling water wells in the desert is a crucial element for agriculture activities

becomes crucial and the support from the ministry of water resources get delayed.

This organization would stress on giving support to migrant farmers, who in many cases cannot afford the drilling fees of private companies, hence jeopardizing their fields. This would be a strategic intervention in attempting to provide water; however, its physical result would be the increase of agricultural lands, and the encouragement of more farmers to migrate to the region. Those would need new houses and settlements that they either build themselves or would be subsidized by the state, as discussed in a coming section.

The locations of the projects discussed for the agriculture related network are roughly pinpointed on the following collective map.
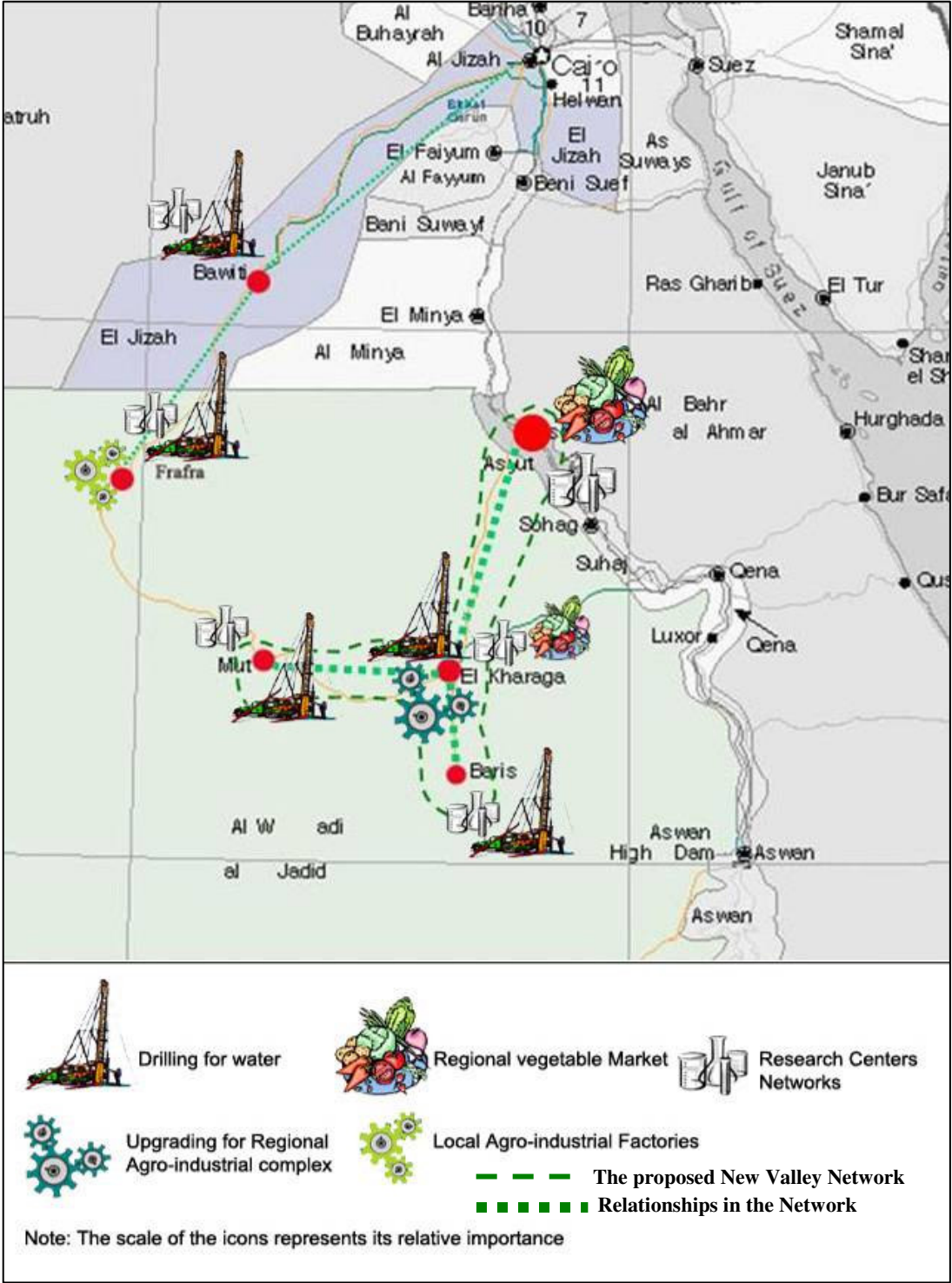
Fig.9-26. Provisional locations of key strategic projects to realize the agriculture related network
Source: Adapted by the author.

9-3 Physical networks

Physical networks form the third layer of the framework that ensures efficient accessibility, through which flows of people and goods take place. As such physical networks are the common factor, which supports all types of networks in the region. This intervention in that regard, would aim on using the opportunities and strengths to alleviate the weaknesses expressed in the SWOT analysis earlier in chapter eight.

As discussed in chapter three, physical networks can be categorized into two; *physical infrastructures* which include road networks, railways and airports on one hand, and the Information Communication Technologies (ICT) on the other, these are discussed as follows.

9-3-1 Physical infrastructure

The intervention in physical infrastructures aims to *enhance accessibility and provide adequate transportation* within the region. At the same time, it aims to enhance road side services and the quality of transportation modes, which were pointed out as a major weakness in the SWOT analysis.

This is crucial for both tourism and agriculture related networks. For tourism the region should become more accessible for tourists either coming from Egypt or abroad while providing them with adequate transportation for traveling. While for agriculture accessibility is important for the marketing of (processed) crops in the regional markets, which need proper means of transporting these goods. This is discussed through three types of physical infrastructure.

I- Road networks

The intervention for road networks should be done in several ways:

- Road services

Initially, enhancing services along regional roads is an important aspect that should be taken into consideration in order to alleviate a major weakness of the region which is the lack of services on regional roads.

Since this lack causes insecurity to travelers, they become reluctant to travel via regional roads, thus traveling to the region.

In that sense, the provision of service stations, petrol station and rest houses along the roads together with sufficient phone coverage, at least of mobile phones, is of an extreme importance in securing travel along these roads making them more appealing for commuters and passengers.

Fig.9-27.The one and only Road station on the way from Giza to Bahareya

- Transverse links

On the other hand, it is important to increase the accessibility links with the Nile Valley, which is actually a current weakness in the region; these links could be made at least in two locations: Frafra and Bahareya. As discussed in the agriculture network, Frafra could be integrated to that network should it be linked to Asuit, through a transverse link to the Nile Valley, which is probably more efficient than reaching for Asuit through the oases road.

The construction of this road from Frafra to Asuit already started several years ago; however the work was suspended because of lack of funds, therefore this road should be finished and even considered as a key strategic project.

Similarly linking Bahareya transversally with Sohag (a city in the Nile Valley) is considered much shorter than the current link to Giza in the North, which would allow for further development of relationships with the Nile valley at this point.

Fig.9-28.The Road from Frafra to Asuit, its construction stopped 30 Km to the East of Frafra city due to lack of funds.

It is important as well to acknowledge and seize the opportunity that would culminate from constructing a national road that starts close to Alexandria and ends up in Aswan with transverse links with the Nile valley. With the idea of setting such a road acknowledged by the central government and even the possible adoption of the project proposed by Dr El Baz, discussed in chapter six, this road is expected to increase the connectivity with different parts of Egypt and even using it as a development axis. As such, linking the above mentioned transversal links with this axis will increase the accessibility of the region and its reach for the Nile Valley.

- Road transportation modes

Bad transportation modes by road in the region are a main weakness, based on experience, the condition of public buses running along the regional roads is deteriorating. Indeed private transportation companies are entering the market; however, the level of service should be more adequate. During the fieldtrips it was observed that many of the buses lacked air conditioning which is quite important for an easy travel through the desert between the settlements especially when the temperature hits the mark of 45 degrees in the summer. Consequently many people would reconsider their visits to the region if they know of such conditions, hence such enhancement is a necessity.

II- Railways

The already existing links of railways to the Nile Valley from Bahareya and Kharga are mainly assigned to transport the ores from the mines in these two locations, they do not serve as public transportation, which would not serve the proposed networks, unless some interventions are made, such as:

- Transportation of people and goods

The above links are considered as existing strengths and assets that could be used, simply by introducing public railways that could benefit of the existing tracks for the cargo railways, thus establishing further accessibility to the region. This could be a support for the tourism network to start the loop from Bahareya by transporting people via rail from Giza which is much faster and easier than relying on road alone.

At the same time, the existing cargo rail could be used for transporting processed crops to the markets in the Nile Valley, from both Kharga and Bahareya, should there be an increased demand that is larger than the capacity of transportation by road, hence, supporting the agriculture network.

- Construction of tracks

As argued, since the Desert Loop can start from Luxor as well, it is proposed to support the accessibility to the region by constructing a railway track that goes from Luxor to Baris, where people can go further to Kharga or Dakhla by road, to continue the loop. This, however, should be considered in later phases once the region becomes known both for tourists and possible migrants from the Nile Valley. At the same time, since there is a possibility of linking Frafra to the proposed regional market in Asuit, it suggested to construct a railway track to transport goods and people, between the two cities. This increases the variety of transportation modes next to the proposed regional road, mentioned earlier.

- Linkage with the proposed high speed train

In recent reports, the government acknowledged the construction of a high speed train that is supposed to link Alexandria and Aswan together in four hours[144]; this train would run to the West of the Nile. Similar to the arguments given above regarding the national road, should this railway be constructed it should be seen as an opportunity to increase the accessibility to the region through connecting the existing and proposed transverse tracks with this proposed national track.

III-Airports

The presence of several Airports is considered an asset and strength to the region as they diminish the travel time from other parts of Egypt. For example it takes one hour to fly from Cairo to Kharga, while it takes about 10 hours to drive there.

This indeed could support the intended network as it can link the region to Luxor, Aswan, Cairo and even the world. However, what is more important is that this method is crucial to attract possible local and international investors, since they would consider the accessibility to the

Fig.9-29. Kharga airport, just outside the city, one of two airports operating in the study region

region and how to get there, one of the determining factors of even going there to explore the possibilities for investments.

This view was actually expressed by some of the city officials who, after the regular flights of Egypt Air to the region stopped in 2003, were complaining that this is leaving the region in isolation and would hence drive away possible investors and possible opportunities. Later in 2006 another company started to fly there once a week, however, this is considered by many as insufficient.

Accordingly, few interventions should be considered to use this asset, mainly:

- Reactivating regular flights

A simple intervention is actually to introduce more flights to the region similar to the pattern used by Egypt Air until 2004 that is at least two flights a week if not more.

It is not a necessity to rely on Egypt Air, as there are other private sector companies that could be invited to operate in the region, such as the current company flying to Kharga[146].

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[144] Usually by regular trains the distance between Cairo and Aswan is covered in almost 8 to 10 hours.

[146] The company is called Petroleum Air Services (PAS) which as the name reveals is a company supporting the oil companies operating in Egypt; however in 2006 it also started regular passenger flights as well.

Perhaps also once the region becomes known, it is possible to upgrade the airports to receive International Flights as the case with other destinations in Egypt such as Luxor, Aswan, Hurghada and Sharm El Sheikh.

- Construction of another airport

Since there are airports in both Kharga and Dakhla, the southern set of settlements could be considered well supported by such an infrastructure, provided of course that the flights are restored. This is not the case however in the North for Bahareya and Frafra.

It is questionable if there is a necessity for constructing an airport there, if the interventions in both roads and railways could make it easier to travel to the region. However, perhaps one day these settlements could become attractive on both national and international levels, hence, a need for direct flights.

In fact, it was planned to construct an airport in Bahareya as early as 2000, but the idea was suspended indefinitely. Should the demand grow for Bahareya and Frafra it would be worth activating this plan again.

Airports are also important for exporting the agricultural products abroad; there might be a future opportunity or tendency in exporting the products of the network abroad. This could be similar way to the pattern taking place to the south of this region in Toshka, which exports its products directly by air cargo to the gulf region and some parts in Europe.

Generally speaking, these physical infrastructures would enhance accessibility and transportation to the region, both proposed networks i.e. tourism and agriculture, will use them but for different purposes. On the long term should the region become attractive to people from the Nile Valley to move there, the presence of high accessibility and connectivity would encourage them further to relocate, since they can still maintain the ties with their origins.

The suggested interventions for the physical infrastructures are shown in the following figure.
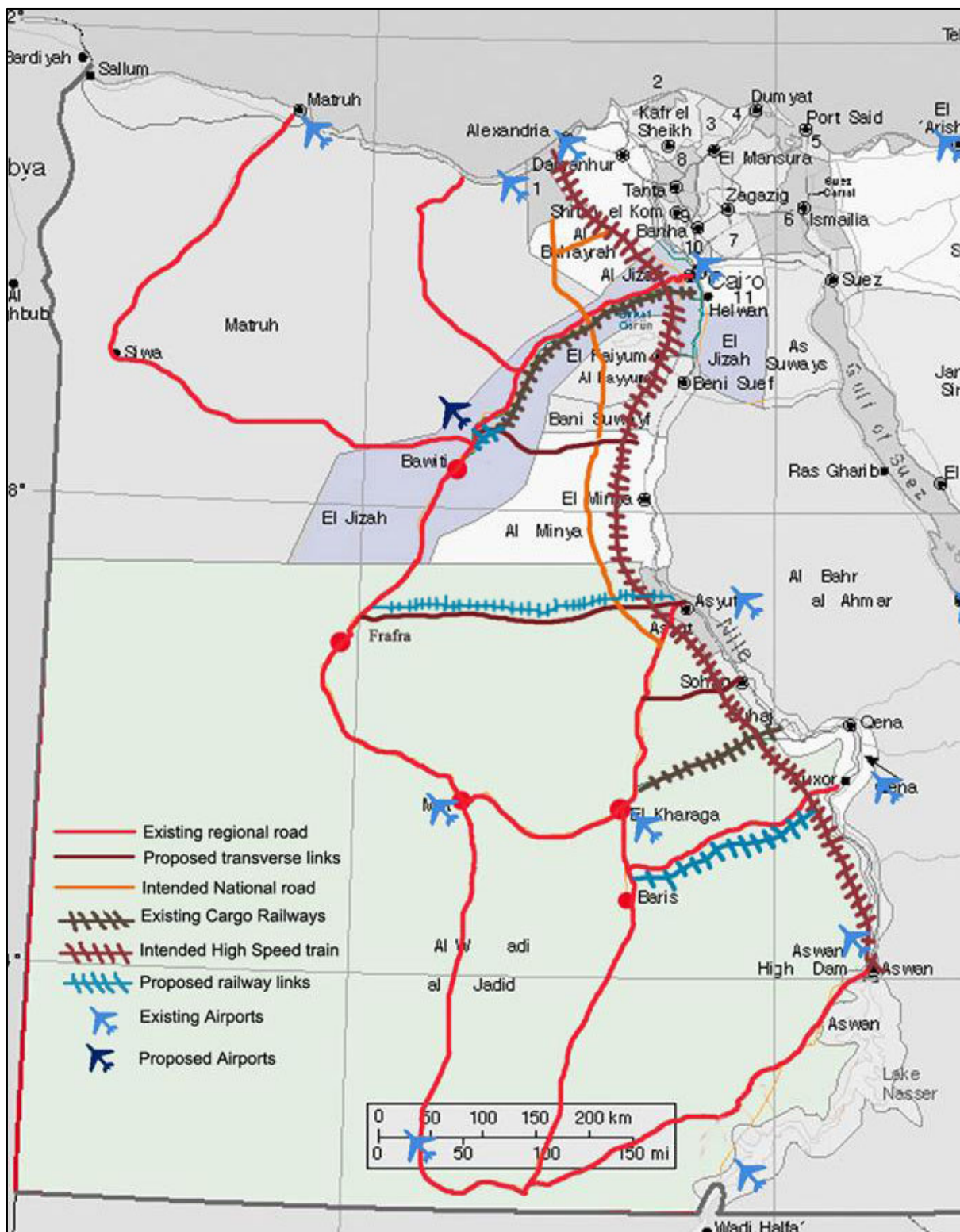
Fig.9-30.Proposed interventions for the physical infrastructure in the study region
Source: Adapted by the author

9-3-2 Information communication technologies (ICTs)

Contrary to the physical infrastructures, the enhancement and provision of ICT services are less complicated. In principle, phone lines and mobile phone services are abundant in the settlements of the region. The major problem however, is the coverage of these services over the regional roads, as discussed earlier, a weakness that should be tackled and alleviated.

Currently, dial up connections are the only way of connecting to the internet in the region, which is of low efficiency, hence a weakness. Therefore, introducing broadband connections is considered an important upgrade for accessing the internet.

As discussed earlier in chapter six the introduction of these broadband connections can be done by simply modifying the supporting modems, while using the same phone lines to upgrade the connection to ADSL, which has been widely done in other places in Egypt.

The use of internet is gaining importance everyday, and the study region is no exception, as the internet can help in its development in the following ways:

- *Publicity for the region*

In a reluctant way, some hotel owners in the regions are using the internet to market their hotels. These are usually individual attempts; however, should they be further organized they can help in making good publicity and marketing.

An example from an identical context could be seen from Siwa oasis in the North West of the Country, where a website for the oasis is setup locally to promote for its attractions, heritage and activities, in addition to promoting its hotels[147]. This is done all over the world, yet in Egypt it is still limited to touristic cities.

It is also important in respect to agriculture for the attraction of possible investors who usually would search for available online information as a way to make a decision for investing in projects in the region. In fact there had been earlier attempts by the provincial government to set up such a web facility, but it became suspended and outdated. Thus, it is a facility that should be restored and updated.

- *A Research tool*

Since one of the main projects for the agriculture network would be to establish research centers and possible faculties of agriculture, connectivity to the internet is a needed tool for research and sharing of ideas among the different research and training centers in the region.

- *Communication between actors*

A possible way to increase interaction among different actors from either the settlements of the region or outside them, would be the establishment of possible web forums for the discussion of ideas. However this step should be only done if there is enough awareness with its possible use.

Similarly it is a tool to link together the local governments within the province to each other and to the provincial government as well, as a way of exchanging necessary information. It is also important to link the different levels of government with the actors' networks as discussed earlier, and as argued in chapter three as a method to organize institutional bodies.

In fact in 2003 there was an attempt to link the settlements of the New valley Province together via web based data bases, yet, the project got suspended when the governor was changed, hence it lost its support. Accordingly, it is argued that this project should be reactivated; this confirms that the governor is an important key actor for any intervention.

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[147] http://www.haberlah.com/hosted/siwa/index.html , April 2007.

9-4 Conditions for networking

As discussed earlier in chapter three, actor networks are considered the most important layers for the success of regional networks. In order for these networks to succeed, the inclusion of all related actors should be ensured, and the agreements made by the actors in these networks should gain legitimacy. The involvement of all related actors including those of the local and provincial governments is considered a necessity since cooperation with the government is eminent for matters regarding legal aspects, permits, funding and so on. Eventually the network between the actors and the different levels of the government would take a formal/informal status.

In order to initiate networking between the actor groups in the region, an arena should be setup, perhaps based on the proposal of an active actor among them. This key actor should be privileged with some political powers or connections. Accordingly, the provincial governor could have this role or possibly one of the mayors such as that of Frafra because of his enthusiasm and relative political connections, or any dynamic actor with relative connections with the rest of the actor groups.

As discussed in chapter three, the actors would form an informal cooperation platform seeking the development of the region and agreeing on the key projects. This agreement could be done in the form of a pact or a regional agreement between actors. Consequently, each actor is responsible in realizing this agreement through his/her organization. In later phases, this informal cooperation should change into a formal development agency, that is bound to achieve the visions and projects agreed on by the actors and finally they would convert this platform into an agency for formal cooperation.

9-4-1 Missing conditions for networking

For the actor networks to be established, several factors and conditions have to be present as mentioned in chapter three. However in the Egyptian case, three main conditions, among others, are not fully sustained with the reason for that attributed to the traditional central system, these are:

- *The principle of Subsidiarity*, where the lower tiers of the government have limited powers for decision making and taking and have to refer to the upper tiers of the government for several aspects. This will negatively affect the cooperation with the other actors in the network.
- *Acceptance of Decentralization*, which started to take place within the last decade however, this is done in a slow pace owing to the long history of the central system, where most of the development plans were made in the center and passed in a top-down approach to the rest of the country. Lack of decentralization would also affect the funding mechanisms as mentioned earlier.
- *Inclusion of related actors*, which as discussed in chapter five is a missing factor in previous regional development attempts. These include some of the local actors together with important investors and stakeholders that are of importance to the network.

Eventually these conditions should be realized in order to obtain a functioning network of actors. It is foreseen that the shift from the current system to a decentralized system based on bottom up approach which relies on endogenous development, will consequently sustain them.

However, until this shift is fully achieved, it is argued that networking between actors and their cooperation with the lower

Fig.9-31.The top-down policy of the government and its traditional central system hinder the cooperation with the actors' network especially with the lower levels of the government.
(Adapted by the Author, based on a discussion with Prof. Van den Broeck)

tiers of the government is possible within current settings, in a way that would combine networking with the hierarchical system as discussed in the following section.

9-4-2 Combining regional networking with hierarchy

It is argued that it is possible to adopt a similar approach to that of the UNDP in the MISR program, discussed in chapter five, to achieve development through networking between actors including the different local and provincial levels of government while getting support from the central government in the form of funding, technical assistance and monitoring.

Sub-networks of actors

In that sense, the actor network includes all actors and stakeholders related to the development process in the region. In the case before hand, it could be one general network that discusses development visions and plans to the region. However, it could be further subdivided to sub networks related to the proposed tourism and agriculture networks and any possible network to be developed in the future.

These sub-networks would include and work in close cooperation with the lower tiers of the government (local and provincial) to develop the visions, frame works would discuss key strategic projects that would realize them, for example the projects proposed for both networks. This will eventually lead to forming commitments to these plans and projects because of the involvement of all actors including those of the local governments, hence alleviating the lack of ownership for the development plans which is one of the reasons for not implementing them as discussed in chapter seven.

At this point, it is essential to rely on one of the characteristics of the local people, which is the code of honor and social capital that is identified among the human assets of this region. In principle the code of honor is attributed mainly to nomadic Bedouins, which evolved from the fact that survival as a small group of people in harsh desert conditions requires cooperation among such group governed by mutual respect and honor[148].

Despite that the people living in the settlements of the Western Desert are not considered nomads anymore and have settled there for many years, they still possess some characteristics related to desert life, among which is the code of honor. In fact through the fieldwork it was noticed that once oral agreements or promises were made, they were respected and carried out fully. Some of the migrant population or those segments of the population who are strongly affected by the life style in the Nile Valley, do not follow this tradition anymore, however the majority still do.

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[148] http://www.everyculture.com/wc/Rwanda-to-Syria/Bedu.html , August 2007.

Therefore, this aspect could be highly relied on when setting informal agreements within the actors especially if they all belong to the same region knowing that once a promise is made, it will be respected and carried out. This does not alleviate the necessity of having formal agreements at a certain point, since there might be other actors from outside the region, who need official agreements to "take things seriously" especially if they represent different organizations and firms, which need such official settings.

As argued earlier, since the local and provincial governments should be involved in this networking process, it is considered a necessity that the central government would grant some powers and competencies of decision making to the lower tiers. This would enable them to engage with other actor groups in discussions and negotiations about the possible regional policies, and making decisions towards them; eventually achieving subsidiarity.

The relation with the central government could then be similar to that in the MISR program, where, it kept the right to acknowledge the plan and make sure it complies with the general national frame work of development (with possible slight changes). It would then diffuse the funds to the provinces which further diffuse it to the local governments of the groups of settlements to implement the projects drawn and agreed upon within the networks of actors.
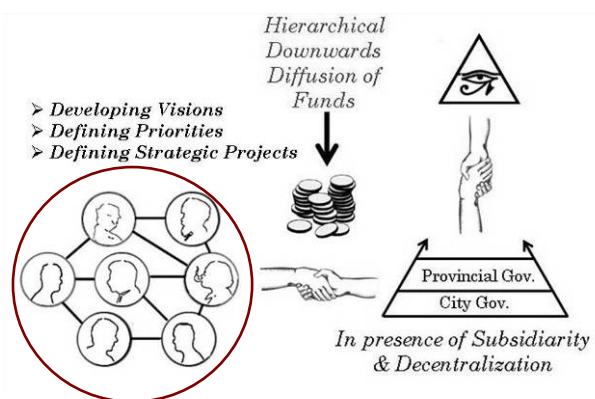
Fig.9-32.Combining networking with the Hierarchical system of the government within a system in transition

In that manner, the development visions and frameworks in addition to the strategic projects to realize them are generated in a bottom-up and a decentralized way. While support, assistance and funding would be diffused in a center-down way through representatives of the central government which are the related ministries to the tourism or agriculture intervention processes.

These representatives are the members of the local executive committees (discussed in chapter five) who are members in the actors' networks, who could establish the link between networking among actors and the hierarchical system of the government.

The function of the actors' networks and its status is argued to be similar to that of the so called Local Action Groups (LAGs).

Actors' networks and the LAGs

LAGs are considered a mean to achieve development through the inclusion of all possible related and affected actors, which are found in some projects funded or related to the EU or other international agencies.

An example for this would be the Leader+ program that is funded by the EU and is set to support the sustainable development of rural areas. Through this project a rural area would be capable of directing its development based on its own choice[149].

LAGs are responsible for giving the impulses and track innovative ideas and executors, and it also coordinates all the projects and processes shaping its own rural development.

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[149] www.leadervlaanderen.be , April 2007.

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The functions and responsibilities of the LAGs appear in another example of a project funded by the UNDP in Bosnia and Herzegovina which is called Sustainable Transfer to Return-related Authorities (SUTRA)[150].

The LAG is a local Partnership, which comprises representation from the municipal administration, civil society groups and business association representatives with an aim to represent a role model for future cooperation in line with public-private partnership concept.

The purpose of LAGs can be summarized as follows:
  - planning what to do;
  - delivering their actions;
  - finding out if they have been successful, and if they have
  - Building on these successful activities and integrating them into their main services so that they become more responsive and address the real needs of local people.

In that sense the LAGS formulate their own development agenda and aims, through involving all related stakeholders, which is similar to the intended case with actors' networks. They however do not have the legal powers to hold money, thus lack structural cohesion. They eventually get their funding from the upper tiers of the government or the funding organizations, which is indeed similar to the case within hand.

The LAGS also have members from the municipal governments in addition to other actors and stakeholders, they are informal but they do have members who belong to the local level of the government, who would be the link with the government in terms of legal aspects, and bureaucratic matters.

This is similar to the three categories of actors discussed in both networks; hence, the relationship between these categories could be modeled on that of the LAGs in terms of its role and responsibilities.

9-4-3 Role of the government

From the above discussion it is clear that cooperation between the regions and the government is needed, however, this cooperation should be done on multi-levels and not exclusively with the central government. Each level should have its competencies and powers to negotiate with the LAGs (actors) and bring them together, stimulate development by introducing incentives and the capacity of decision making, which extends from simply granting permits to being an active partner in development with a strong reliance on the principle of subsidiarity.

Accordingly, the role of the central government instead of being the main source for decision making would change to:
  - Stimulate the lower tiers of the government to formulate development policies and strategies in an endogenous way rather than imposing them
  - Shifting to a more monitoring role and perhaps setting up loose national frameworks, which integrate local and regional initiatives of development,
  - Supporting local and provincial governments through sufficient funding, experience and knowledge.
  - Considering other actors in the development process as partners and not as coordinating agents to realize its plans, as discussed in chapter three.
  - Monitoring the actor networks to ensure that the voices of all related actors are heard and not excluded. As discussed in chapter three, exclusion of weaker actors is one of

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[150] This program supports verticalization of relations between different levels of government primarily in order to assist the systemic approach to strategy planning and its effective implementation, hence, the program simultaneously supports the development of technical and management capacities both at the state and municipal levels. http://sutra.undp.ba/index.aspx?PID=3&RID=27 , April 2007.

the drawbacks in the networks; therefore, the government role would be to ensure that all related actors are involved, and that decisions are taken in a democratic way. Of course the mechanism to ensure the legitimacy of the network through such monitoring is still to be investigated.

Should these changes take place, it would be indeed possible to establish the relationships within the actors' networks in terms of the cooperation between the civil society, and the government.

9-4-4 Adjusting provincial boundaries

The fact that 4 groups of settlements belong to the New Valley governorate while Bahareya belongs to Giza governorate adds to the complexity of the situation in terms of cooperation and coordination for development attempts in regards to official administrative matters.

It could be argued however, that this would be a problem as well with other cities along the Nile which the proposed networks will include e.g. Luxor and Asuit. Hence there should be a change in the system, as argued, to give more competencies to local governments in engaging in such cooperation attempts. Yet, the system is still in slow transition to a more decentralized one, which means that many aspects of the central system still prevail.

At the same time, the situation for Bahareya is critical, as it falls in the periphery of Giza and Giza is part of the Greater Cairo Region, as such there are other priorities for the provincial government to handle, eventually giving Bahareya a low priority.

This is not the case for the other settlements, as they fall within one province hence the administrative relations among them are already in place. All of them have relatively the same degree of attention from the provincial government, while the other cities in the Nile Valley e.g. Asuit are the capital cities of their provinces.

The concern for such administrative situation was discussed by some of the interviewees earlier in chapter seven putting it straight forward that because of this situation, attempts for regional cooperation that include Bahareya would be difficult in comparison to other settlements.

Accordingly, it is argued that a change in the administrative settings should take place to include Bahareya within the New Valley governorate in order to avoid such complications. These are already reflected for example with its relation with Frafra, in regards to the agricultural activity that was discussed in chapter eight.

The change in the boundaries can be the alternative discussed earlier in chapter six that would be subject to some modifications to comply with current settings. This alternative was first introduced by the GOPP in 1996 hence, as illustrated in figure (6-14), it should be further revised before its application; however, the concept remains the same.

9-5 Further spatial impacts of networking and networks in the case study region

As discussed earlier, the establishment of regional networks will have evident spatial impacts in terms of defining specific places within the region, which would be physically done through the key projects that are introduced in the region. As seen from the earlier discussion, these projects capitalize on the spatial assets of the region with its cultural, historical and natural dimensions. However, further spatial impacts are expected to take place, they are discussed following the discussion on spatial impacts in chapter three.

These impacts which would result from applying regional networking and networks are manifested in needs for space and redefining the functions of space and place in addition to

the emergence of new types of human settlements. Already some evidence exists in the study region to support the assumption of the occurrence of these impacts.

Following a similar sequence as that used in the theoretical overview of the spatial impacts of networking and networks in chapter three, this section will discuss the possibilities of occurrence of such impacts in the case-study region.

9-5-1 Needs and definitions of space

The needs for space are the direct spatial impacts because of networking and networks, which arise because of three main aspects:

1- As an impact from the sectors of activities, that in the case within hand will result from the key projects that will be implemented to realize the two networks of agriculture and tourism. It is evident that the construction of regional markets and regional research institutions, supporting the agricultural network, needs space, which is actually an abundant resource in the study region, hence transforming this spatial resource into defined places. In addition to the expected spin off of related and supporting activities that would surround these locations of interventions.

To a greater extent the same impact will take place because of the key projects that will be implemented to support the tourism network such as the path definition projects which would change the space along the way from the settlements to the monuments, the definition of national parks in the desert and the establishment of spring and sand spas which will require the construction of certain types of facilities, that will eventually define the space into places.

2- As an impact from the physical networks, since there are a lot of proposed interventions to construct the missing links of the physical networks, which includes the construction of several transversal road links, railways and an airport. The construction of these infrastructures would be a direct spatial impact in the region, as these are manifested in space. They will be accompanied by train stations, road services and stops, which in themselves can define the space in which they are located, and reshape it with a new image.

A good example to illustrate these possibilities is the Cairo-Alexandria desert road, which over a period of twenty years was reshaped totally because of the road services. These started as simple road stops or petrol stations and through time they would attract other activities such as recreational facilities, motels and restaurants to agglomerate next to it, eventually this road is not a desert road anymore.

Fig.9-33: Omar Oasis, a complex of restaurants, recreation facilities and petrol station, which evolved on Cairo – Alexandria desert road.
Source: Google earth, August 2007.

3- As an impact from housing needs, that will result from the development attempts in the region that are taking place and would further accentuate through regional development. This will lead to a possible increase in the population of the region who naturally will need housing.

This need will be in both rural and urban settlements; which is discussed as follows.

In rural Settlements

The need for housing in rural settlements is quite tangible in the case of the newly reclaimed lands, and the ones that will get reclaimed. This was quite evident in the case of Frafra where farmers migrated from the Nile valley causing the population of Frafra to increase from 3000 inhabitants in 1995 to 21000 in 2006.

This phenomenon also exists in Bahareya, yet on smaller numbers, and as mentioned by the government officials it started, yet unnoticeable, in Dakhla indicating that rural population most likely will continue to grow, hence, the need for housing.

Earlier interventions

In the cases of Bahareya and Frafra, the farmers built their houses themselves. They first lived in temporary shelters, then started building their houses, once this was done, they sent to their families in the Nile Valley to come and join them. Of course in both cases they struggled to get support from the government and this support differed from one settlement to the other. The scale of intervention of the farmers was not only confined to some housing groups, they also built villages in the desert.

During the field work in 2006 several houses in these settlements were visited. It came clear that at later phases because of political agendas and elections, electricity was provided to them; however they still lacked several services in particular sufficient health care services. Accordingly, the building up of these

Fig.9-34.Houses built by migrant Farmers in both Frafra (above) and Bahareya (below)

settlements is a clear manifestation of a spatial impact that contributed in defining new places in the desert. It is important to mention that in some cases these settlements emerged as a different type of settlements, which is discussed later in this section when discussing the emergence of new types of settlements.

The government intervened recently in Frafra where part of its intervention was to build a village for some of the migrant farmers, as discussed in chapter six. However, in terms of affordability the houses in this village were out of reach for the majority of farmers, eventually no one moved there and it is now a ghost village.

Possible interventions for rural housing

It is argued that the current approach of self building of houses by the farmers, already contributed in the increase of the built up area in the region, while the direct intervention of the government resulted in a ghost town.

Therefore *it is proposed to adopt the approach of self building by the farmers, while the government should have a regulatory and supportive role in terms of supplying the new homes and villages with the necessary services, infrastructures and basic site planning.*

This support was done already in some villages in Frafra and Bahareya, but it only took place because of the pressure applied by the farmers, as discussed earlier, or in some cases to achieve popularity during elections. Such an approach should change; the support of the local and provincial governments should be applied parallel to the construction works and in coordination with the farmers according to their needs. In that sense, the approach that was introduced earlier in Frafra in terms of organizing the settlements patterns on the level of rural settlements for the provision of adequate services could be further adjusted and adopted for other rural settlements in the rest of the five groups.

However, it should be stressed that the local and provincial governments could only be able to intervene in such a way if they have enough capacity and capability of local decision making and taking and mobilization of funds, in that sense the adjustments proposed for the government system becomes relevant.

In urban settlements
The demand for housing in the cities of the region is different in its origins and reasoning than that of rural settlements. Should development gains momentum because of the networks discussed earlier, the region might become more attractive for more people to come from the Nile Valley and work in support activities, projects and future spin offs in the region. Slowly but surely these would lead to the growth of its settlements, hence, the need for housing and consequently the need for space for this housing.

There is however another reason other than migration from the Nile Valley that would result in such demand, which is the improving of living and the economic standards of the region as a result of development intervention, thus enabling its people to afford better housing.

As the cities evolved initially from villages in the 1950s and 1960s, the conventional pattern of housing in these villages was in a horizontal low rise pattern, in terms of a large plot of land on which the house is situated together with a garden in which the family would grow their fruits and vegetables.

Earlier intervention
To a large extent the above pattern continued until the early 1990s when flash floods caused damage to many of these houses that mostly were based on earth construction, and flooded them, causing many families to slowly but surely abandon them and move to apartment buildings provided by the government, since they could not afford to buy single houses.

In several discussions with locals who moved to these houses, they reflected on how they preferred their old houses because they were more adequate to the hot arid climate in comparison to the concrete – red brick buildings that they moved to; however, in the later they were sure that if flash floods happened again they would not get homeless.

Possible interventions for urban housing demands
Should the living and economic standards in the region rise, the people would be capable to afford the housing typology that they like to live in, which in this case the single house with garden or the court yard house.

In that sense, a possible solution for the housing demands would be in the horizontal expansion of the cities, which would substantiate two main objectives:
- The expansion on desert land, which eventually carries out the intended national policy of expanding on the desert.
- Meeting the will of the people in terms of the preferred housing pattern and typology.

The main constraints that should be taken into consideration would be:
- To avoid the construction on any arable land or reclaimable land.
- To avoid the path of sand dunes as they can hardly be stopped.

A good example for this horizontal expansion was the plan for Kharga city that was done in 2003. This plan was divided into two main parts, the first dealt with the existing built up environment and its necessary upgrading and provision of adequate services, while the other dealt with the future expansion of the city[151].

In an interview with Prof. EL Wakil who was the team leader, she explained that the horizontal expansion of the city was directly based on the demands of local population who expressed a strong wish in having large plots of lands to achieve the preferred housing pattern explained earlier.

At that time the provincial government was supposed to provide necessary services and road networks, which would have been some how affordable for the people to build their houses knowing that they are supported with services and infrastructures. Unfortunately, there was not enough funding to implement this plan so far.
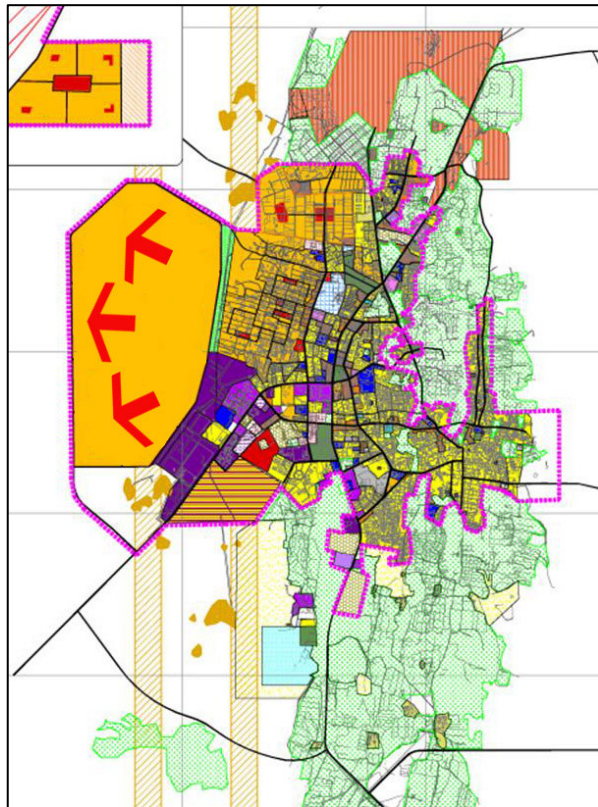
Fig.9-35.The structural plan for Kharga and the concept of expanding on desert land.

However, as in the case with rural housing, should the changes proposed to the system take place and the capability of self funding is also achieved; this kind of interventions would be indeed possible.

Therefore, it is possible to replicate the example of Kharga in terms of its horizontal expansion on the desert in the other cities of the region should the need is raised.

It should be noted that it is not recommended however to build either villages or cities from scratch relying that the population will eventually relocate to them.

From the experience of Frafra, that is explained in chapter six, and from the long Egyptian experiences of building new cities, that was discussed in chapter four, with only quarter of their expected population relocating, the building of such settlements should not be done unless urgent need is evident.

Alternatively, expanding the existing settlements in the desert allowing the people to build their own settlements, as in the case of the migrant farmers, should be further considered and supported. In this case spatial needs are not of a problem, since there are no limits for the settlements expansion in the desert, except for the natural parks and protectorates. This would practically change the desert space into inhabited places.

In general, it is important to tackle carefully the approach of new settlements, in other words starting from scratch. As discussed in chapter four, building new cities was one of the main approaches for urban and regional development in the past few decades in Egypt, however, the outcome of these cities had proven to be unsatisfactory with a lot of depletion of resources in an unsustainable way.

Similarly when the government tried to intervene by building a village in the desert it did not work as discussed in chapter six, despite that this approach was to a certain limit successful in the 1960s in the study region in the first development attempt.

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[151] The researcher was part of the planning team who prepared the initial structural plan for the city in late 2002 and early 2003.

The reasons why these settlements did not function are many, yet, it is not the scope of this research to discuss them. As argued above, the main approach in housing intervention in this particular region should be to expand the existing settlements on the desert, not like the Nile Valley where the main aim is depopulate it and stop its expansion on agricultural lands.

9-5-2 Redefining the functions of space

Among the spatial impacts of regional networking and networks are the redefinitions of functions of the built environment, consequently their occupied space, and the redefinitions of the social structure within the region, these redefinitions are discussed as follows:

1- Redefining the functions of the built environment which is expected to take place as a result of the key projects that are geared to realize the networks of tourism and agriculture, more specifically that of tourism. The main redefinition of functions would be the reuse of deserted vernacular housing for tourist accommodation. With the redefinition of the function, the activities that would take place will differ from the usual activities that take place within housing districts to more tourist recreational activities within the public spaces of these districts. This was evident in the example given from Siwa Oasis the "Eco Lodge" which reused some of the existing housing stock and transformed it into tourist accommodation.

Similar redefinitions might take place when implanting other projects, such as defining heritage sites, in which specific places will be attributed to some touristic activities, possibly indoor or outdoor museums. This could be already seen to a certain extent in the ancient Islamic town of Al Quasr in Dakhla. Based on a private initiative a house or two were converted into an ethnographic museum that represents the way of life and activities of the residents of this ancient town before being deserted.

Fig. 9-36: An exhibition room of the ethnographic museum at Al Quasr in a former residency.
 Source: http://lexicorient.com/egypt , August 2007.

2- Redefining the social structure of the region is already taking place in a slow but sure way, for example the case of the migrant farmers from the Nile Valley in Frafra and to a lesser extent in Bahareya. The migration flow will possibly increase to other settlements in the region, should the intended development succeed, eventually attracting more people to work in the agriculture and tourism sectors.

Accordingly the population of the study region is getting mixed with those coming from the Nile Valley, which perhaps might be of a negative impact. This could affect the moral structure of the endogenous people living there and causing conflicting situations because of the different mentalities and background, a concern that was reflected earlier in chapter seven by some of the interviewees.

 Despite that these impacts and redefinitions are of social nature, however, social behavior is manifested in space redefining it according to different cultural settings. Unfortunately it is not within the capacity of this research to go in depth with such definitions, as this requires further socio-spatial analysis that could not be done because of the time and scope limitations of this thesis.

9-5-3 Emergence of new types of settlements

As discussed in chapter three, among the spatial implications of networking and networks is the emergence of new types of settlements with the given example of Silicon Valley.

In the case within hands, emergence of new types of settlements is expected to take place, which are resulting from the sectors of activities on which the regional networks are based and might also lead to the emergence of new types of modern desert architecture in the region. Already the emergence of new types of settlements is taking place as a result of the tourism and agriculture sectors of activities, it is argued that such settlements will increase once the regional networks are applied and implemented successfully.

On one hand, because of agriculture activities that led to the migration of farmers from the Nile valley, rural settlements established by the migrant population emerged, but different from the already existing rural settlements. On the other hand, based on tourism activities a new type of settlements for tourist accommodation emerged and is locally known as the camps or lodges.. These two types are discussed as follows.

1- New patterns of rural settlements

As illustrated in chapter six, the migrant farmers from the Nile Valley, constructed several villages next to the fields that they reclaimed mainly in Frafra as well as Bahareya. During the field work it was noticed that these settlements differ from the local villages, but they are also different from each other i.e. those in Bahareya compared to Frafra.

In Frafra

The initial availability of water in Frafra let to the migration of thousands of farmers to settle there and reclaim desert lands into cultivated areas, as discussed in chapter six. The direct impact of such migration was the construction of several informal settlements by the migrant population (see figure: 6-24). However, these settlements are located in a scattered pattern depending on water sources. Though next to the main oasis road[152], they do not follow the existing settlement system, in terms of service provision, which is already inadequate in the existing settlements as discussed earlier. Hence, they suffer from a sever lack of necessary services e.g. health care services and education facilities. At the same time it is very possible that further community construction of such settlements continue with more migrant population especially with the implementation of key projects of the agriculture network that might cause prosperity in the agricultural sector.

In Bahareya

According to the field work observations, the number of migrant farmers to Bahareya was relatively smaller than that of Frafra. Accordingly, they did not build villages as was the case in Frafra, rather they settled in small communities in a ribbon development pattern. They are located in relative proximity to each other wherever there are water resources (see figure: 8-29), they would settle down by building their houses next to each other adjacent to their fields and next to a road.

Fig. 9-38: A small ribbon settlement of migrant farmers in Bahareya
Source: Google earth, July 2006.

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[152] See Chapter six, section 6-4-2 for the detailed discussion on the settlements of the migrant farmers in Frafra.

Like their counterparts of Frafra they suffer from the lack of necessary services to their settlements, which do not belong to the existing settlements' system of service provision existing in Bahareya. Accordingly, it is argued that these new patterns of settlements should be treated in such a way to ensure an adequate provision of services and facilities to their population. Perhaps this could be modeled on the possible intervention in Frafra by GOPP (2004), discussed in chapter six, which is presenting a scheme for service provision within the settlements, by redefining the existing pattern[153].

Another possible intervention could be done through the provision of healthcare and daily services, while introducing an adequate and affordable transportation system that facilitates the commuting between such settlements and the service centers within the settlements' system. However, such intervention needs to be thoroughly studied and designed in order to be properly implemented.

2- The camps and lodges

It was noticed during the successive field trips that because of tourism, local investors started to invest in tourist lodging and accommodation. However, they did not necessarily invest in conventional hotels or hostels, rather what they call the "camps" or "lodges".

Their main function is to act as a temporary accommodation for tourists who will embark on a desert safari; as such they act as base camps for such safaris. In addition to the accommodation, preparations and gathering of tourist guides, land rovers and equipments take place there.

There is no definite prototype for these camps, they could be built as permanent structures, covered by domes or vaults, or they could be of light weight structures such as huts, and bungalows or in some cases they could be of mixed composition. These camps are usually

Fig.9-37: Miramar lodge in Bahareya & the Bedouin Camp in Dakhla as different types of settlements.

located at the edge of cities and sometimes even by the road side away from any existing settlements and close to the desert attractions.

Currently there are no guidelines for this new type of settlements, as each owner would improvise the layout and the needed structures for his compound. However, with the possible future increase of these camps/lodges, it might be necessary to have a better understanding and guidelines for future constructions. On the other hand, it is clear that these types of settlements are newly defining the spaces in which they are constructed and transforming them into places of activities and meanings.

The emergence of another type of architecture in the region is also possible. This type would be based on traditional desert architecture and urban fabric but in a modern way. It would use contemporary building material that is adequate to the desert climate. Perhaps the use of the existing vernacular housing and the expected increase of the living standard in the region would promote for such emergence.

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[153] See Chapter six, section 6-4-3 for the full illustration of this intervention.

9-6 Regional networks and the clusters of regional assets

Through this chapter, it was evident that the proposed regional development interventions capitalized on the existing regional assets. In different occasions the importance of the spatial assets was stressed; however, it is important to illustrate that such interventions were based as well on the other clusters of regional assets,

As discussed in chapter two Friedmann (2006) argued that there are seven clusters of tangible assets for city regions that should be invested by local governments; these clusters include human, social, cultural, intellectual, natural environmental and urban assets.

Despite that these assets were related to city regions, it was argued that they could be also taken into consideration on the wider regional level such as the one before hand.

It is interesting at this point to discuss how the application of networking and networks in the case study region will not only invest in these clusters of assets but possibly maintain and enrich them. This is discussed in this section, with the consideration of an additional view to the cluster of spatial assets:

- *Human assets* that are referred to by Friedmann as the people and the quality of their lives and livelihood, through achieving good housing and providing education and health facilities to the population. He also argued that this should be the aim of every genuine development.

 It could be argued that the networks discussed earlier could contribute to the aspect of housing as discussed in the previous section, where desired housing according to the contextual norms could be provided should these networks have the desired impact in terms of economic development.

As for health and education, it is indeed the responsibility of the state to directly intervene and provide them in the region. Despite that the region has good indices in terms of health and education services in comparison to the rest of the nation, some settlements, such as the emerging rural settlements discussed earlier in this chapter and even some original villages are deprived from such services with their population suffering to seek them from other settlements in the region as discussed in chapter eight[154]. The proposed interventions to ensure such service provision discussed in the previous section and in chapter six can not be implemented without a concrete support from the state.

- Social assets in the form of organized civil society which is the multiple self-organizing activities of local citizens. Such organized society should be seen, Friedmann argues, as a source of civic strength and an asset worthy of public support.

An example on the benefits of such activities would be the housing associations that would assist people in acquiring a home and in integrating new comers to the society.

This is very relevant to the case within hand especially when it comes to networking between actors in the study region. A clear example is given by the case of migrant farmers, which has been ongoing in Frafra for the last ten years, who would help each other upon arrival to the region until they manage to settle down and build their homes. Such an existing asset should be supported by the local government, which was eventually done in the case of Frafra.

Accordingly, the setting up of actor networks that include all the different actors of the civil society including those of the local governments and different citizen groups, would allow for such support to be realized as well as building on the existing social assets.

- Cultural assets which are represented in the region's heritage of its built environment and vibrancy of its cultural life, and is divided as argued by Friedmann into physical heritage and cultural traditions.

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[154] See Chapter eight, section 8-4 on social relationships, which tackled the aspect of regional social services.

In terms of the physical heritage it refers to historical buildings and distinctive neighborhoods, these are important in establishing a sense of place, but also important for the people living in the cities of that region in terms of valuing their past.

In the study region, many of these heritage sites were neglected and even in some cases were violated and vandalized such as the historical quarter in Kharga city.

The tourism network thus comes in line with the importance of these cultural assets in terms of the projects geared towards investing these assets, while strengthening the physical heritage. Indeed this is done to define the tourism network, but also to keep the local heritage from fading, should these physical assets disappear, the local identity and memory of the place would be negatively affected.

Another aspect in regards to the physical cultural assets that should be capitalized on and further developed is the architectural quality. In the case study region, vernacular architecture is considered a regional asset that is considered a potentiality among the tourism network, which stressed on reusing the deserted vernacular housing. However, the quality of this architecture should be further enhanced, as discussed earlier, vernacular housing is very adequate to the regional climate, but it is poor in facing external and unexpected climatic emergencies, such as flash floods, therefore, its capability in facing these events should be enhanced.

This would be done through the reuse of existing houses in which architectural intervention is expected to renovate the houses to be involved in the project, hence, enhancing their quality. Accordingly, spreading the knowledge to enhance the capacities of the houses among the local population would enhance their houses if they are still living in vernacular houses, and might encourage others to build their homes based on vernacular architecture but with better enhanced quality.

In terms of the popular traditions in which the whole society would participate such as festivities or occasions, Friedmann argues that such popular occasions build bonds of solidarity among the people while giving an identity to the place.

This is an important point which is considered strength to the region, however, in the case within hand the cultural traditions of the region could not be studied within the set time frame. Therefore, it is better to further investigate this aspect and examine how far networking in this region could be of benefit, if any, to it.

- *Intellectual and creative assets of* the region which are the quality of its universities and research institutions and their creativity that he argues are essential to a region's future and should count among its finest treasures.

In the case within hand, these assets do not even exit, with universities only available in neighboring regions hundreds of kilometers away. Because of the small number of population existing in the region it is difficult to establish full universities, as argued in chapter eight.

However, as discussed in this chapter, faculties and research centers are considered essential for agricultural development, which currently do not exist in the region. Accordingly, a network of research centers and faculties affiliated with universities in the Nile Valley are proposed among the projects to setup the agricultural related network, hence, introducing a missing intellectual and creative asset to the region.

However, it is important to note his argument which stresses the importance of public support towards creative work, which through networking between actors in the study region can indeed provide such support to the intended faculties and research centers, yet again on a different scale from that advocated by Friedmann at least in the initial phases of setting the networks.

- *Natural assets of the region*, which includes picturesque landscapes, fisheries and lakesides among others, whose use is both of production and enjoyment. He argues that the city depends on its natural endowment and proper city planning should be applied to protect these regional assets from being over run by city expansion.

In the case within hand, the natural assets differ from the context which Friedmann refers to in which he considers cities as parts of regions in green habitations.

Within the case study region, natural assets are basically of desert nature, with the only green fields in the oases, which are considered "pure and virgin".

In that sense proper planning should be introduced to protect the green fields and the special natural features of some parts of the desert. These are both assets for tourism and agricultural production, with many key projects for both networks, geared to preserve and develop them, while at the same time using them as a source for tourist attraction.

- *Environmental assets* which include the qualities of the environment that are necessary to maintain life itself such as air, water and the capacity of the land to support human settlements at high densities. In the case within hand these assets are sustained in terms of air since there is almost no pollution and the capacity of land to support human settlements, since the region is of a very low density. The crucial aspect in the region is water, which is necessary for irrigation hence for food production. In that sense some of the projects within the agriculture related network would intervene in this aspect in terms of securing water and through the research centers finding better ways of using it.

- *The quality of urban infrastructure*, which includes the facilities for transportation, communications and other amenities, with the principle of the affordability of these services to all the population of the city rather than only the elite of the society.

Friedmann reflected on urban infrastructure, however, the same importance stands for *regional infrastructure* as the case within hand. As discussed in this chapter the intervention in physical infrastructures and communications is considered an important element of setting up the regional networks. This will result in providing the region with this cluster of assets, since the quality of the existing infrastructure in the region is considered of poor quality. At the same time, the actor networks should stress on the importance of their availability for all the population of the region and not focusing only on the groups related to the two proposed networks.

- *Spatial qualities and assets*, which were considered while studying the possible interventions in the study region are considered an important cluster of assets that should taken into account with the other assets of Friedmann listed above.

As discussed in chapter three, among the criteria argued by Albrechts (1998) that should exist within a network, is the quality of its urban areas. The spatial dimension in the study region is characterized with its simplicity in terms of the relationship between the built up environment and the open spaces.

In regards to the old quarters of the city, public spaces are articulated within the vernacular urban fabric to suit the local climate, accordingly, the typology of these spaces differ from their counterparts in cities through the Nile valley. This uniqueness of space could be considered as an attractive asset itself. Through the suggested projects in regards to vernacular housing, the attention should be given as well to the spaces within the old districts, in such away to capitalize on their nature and also to enhance their quality.

Meanwhile, space is considered an asset in the region in the sense that there is infinite space for expansion of existing settlements and the construction of the key projects, an asset that is strongly lacking along the Nile Valley.

As discussed earlier, the expansion of cities in the study region would take place on desert lands to allow for large land parcels, that are preferred by many people to construct their houses with their private gardens included. As such with space as a potential for expansion, the qualities of open areas within the new districts of the cities of the region, which are considered spacious in terms of the densities of people using them, will not be endangered by possible construction of housing due to future population growth that could degrade their qualities. Instead the expansion would take place on desert lands, hence, preserving the qualities of the existing urban areas and creating new ones in the new expansions.

9-7 A different approach and impacts

The chapter illustrated that there are two possible regional networks that could be established in the study region, one related to tourism and the other to agriculture. Both networks are based on the existing assets and potentials of the region, more specifically its spatial assets, which also reflects its historical, cultural and natural assets. These regional networks would have direct spatial dimensions and impacts, since they define a specific space of the region. The key strategic projects that would realize these networks were identified together with the related actors in the process.

Some aspects that are needed for the realization of these networks were tackled mainly networking between actors and the creation of actor networks or development agencies, and how their relationships with the government would take place. Another important aspect was the physical networks, and how can the missing links within the current physical infrastructures be substantiated to form these networks. In this sense, the three layered framework i.e. actors, functional and physical networks, would be formed and set to operate.

However, what was not clearly investigated is the manner that both regional networks could be related. Of course they both use the same physical networks, and both development agencies would have common actors. But it could be possible to argue that both networks would complement each other, for example the New Valley (agriculture network) would supply the Desert Loop with necessary catering supplies for its tourists, which in turn could be a major client for the products of the New Valley. However, the mechanism of this cooperation should be further studied.

Finally, it was concluded that the application of networking and networks in the region will invest the existing regional assets; furthermore, they actually will introduce the missing clusters of assets that are lacking in the region and will enhance the existing ones.

It is concluded that the application of networking and networks in the case study region, come in line with certain aspects of the integrated area development approach illustrated by Albrechts, Van den Broeck, and Leroy (1999) and Moulaert et al (2000), discussed in chapter two. Since the application in the case study region relies mainly on investing in the regional assets to stimulate regional development to enhance the general situation within the region. This will be done based on the networking of all actor groups together with the different agencies and institutions, mainly focusing on inducing development from within (endogenous development) through a decentralized bottom up approach of participation.

It seems however, that the application of networking in the Egyptian case study region differs from other contexts for example the European one, from which several cases tackling regional networking and networks were studied earlier in chapter three. It is also evident that the proposal for applying networking and networks in the study region introduces a novel approach of regional development to the Egyptian context that seizes the opportunity of the transforming environment within the Egyptian planning system. These aspects are further concluded in the next chapter.

X- Concluding Remarks:
Regional Networking and Networks in Egypt

10-1 The challenge

A proper approach for developing the Western part of Egypt is based on the region's own assets and opportunities, which are capitalized on by the related actor groups who cooperate and collaborate together. This is done through networking between these groups, leading to the creation of regional networks to realize the shared objectives and development visions set by the actors according to their interests.

In a nutshell, this was the hypothesis tested through this research. It is both unique and challenging at the same time. Unique, because it is the first, which investigates the use of networking and networks as a tool for regional development in this Egyptian region. It is also among the very few that investigates the use of networking and networks in a developing region. It is a challenge, because of the special characteristics of the studied region, which is remote, desert and peripheral. In other words it is not an "evident" or typical region in comparison to conventional European regions, in which networks are found.

Taking this into account, it was important to understand the different aspects related to the use of networking and networks in regional development, and accommodate these aspects to suit the Egyptian context in general and the study region in particular. This was done over the three parts of the thesis, the theoretical background, the Egyptian context and the case study, while answering the research questions that are raised based on the hypothesis.

The first part of the thesis provided a comprehensive theoretical background, which supported the analysis through out the research. This part gave a brief overview on the different regional development theories and approaches, which were tackled in chapter two, mainly focusing on center-down approaches contrasted against the bottom-up approaches and the call for another development that focuses on meeting the basic needs of the people through endogenous development. This was used later to analyze the previous regional development attempts that took place in Egypt and the study region. A comprehensive theoretical background on networking and networks was given in chapter three, which illustrated, among other elements, the different levels of networks, the effects of networking and networks on regional development and the success factors for networking. It also showed the importance of introducing regional development based on the own opportunities and assets existing within a region. Three types of networks that together would compose a regional network were discussed thoroughly, these were: the actor, functional and physical networks. Together these three types would form a three layered framework for applying and analyzing regional networks, which are discussed in part three of the thesis. The study also stressed on the spatial dimensions of regional networks and how they capitalize on the existing spatial assets of a region, in addition to their other spatial impacts that they might cause when applied. These arguments were substantiated by historical and contemporary examples of networks.

With the theoretical background on the different regional development approaches, the second part of the thesis reviewed and analyzed the previous regional development attempts that took place in Egypt since the 1960s. The analysis situated these attempts within the regional development theories, while tracking down the Egyptian line of thought in that regards.

This was carried out in chapter four, taking into consideration the different political and socio-economic factors that accompanied these attempts and assessing their outcomes. They were positive in the sense of increasing the built up area in Egypt, but were not very successful in increasing the populated area of the country and releasing the pressure from the Nile Valley. Accordingly, the reasons for the partial failures of these attempts were discussed in chapter five by analyzing the regional development process in Egypt that was prevailing until recently. The current transformation within the Egyptian planning system and its shift towards decentralization and public participation was also discussed in light of recent bench mark projects, in order to give a proper overview on the transforming system within which networking would be proposed. To give an introduction on how networking can be combined with a hierarchical system, a case of combining bottom up development within the hierarchical system was discussed.

The third and final part of the thesis aimed to examine the hypothesis of applying regional networking and networks in the Western part of Egypt to achieve regional development. Initially the previous regional development attempts that took place in the study region were reviewed and analyzed in chapter six. This is done to understand the previous approaches of regional development within the region, hence, identifying the aspects of success and failure within them. The aim was also to take into consideration some of the aspects proposed in these plans, within the intended application of regional networking and networks.

This same idea was discussed in chapter seven, with several Egyptian academics, professionals and government officials, in order to know the different points of view rejecting or accepting the concept of regional networking and networks. The discussions also tackled the possible sectors of activities that could be involved in such networks and tried to identify some elements for their implementation. The existing relationships within the study region were analyzed in chapter eight to identify the possible sectors of activities based on the existing spatial assets of the region that could be developed into functional networks. It also investigated the power, interests and visions of the related actors, which was supported by a SWOT analysis. Eventually, with these relationships identified, it was possible to investigate a scenario for applying regional networking and networks in the study region, which was done in chapter nine. Possible regional networks were identified as the Desert Loop, which is based on tourism, and the New Valley, which is based on agriculture. These are argued to have a strong spatial dimension, since they are to be physically defined by strategic key projects to realize them.

To support these networks a good physical infrastructure network should be developed in the region. But in order to run them, it is suggested that regional development agencies that would evolve from actor networks should be formed. These were accompanied by a proposal to combine networking with the current hierarchical system, to ensure the formation of these agencies and ensuring their legitimacy. Finally further spatial impacts that could evolve from the application of networking and networks for regional development within the region and its settlements were discussed.

It is seen that the outcome of this research verified the hypothesis, and it is found that regional networking and networks can be applied in the study region to achieve regional development. However, it is also found that certain factors and elements should be substantiated first to allow for such application, such as decentralization, and the principle of subsidiarity, in addition to other physical elements. This application differs in nature from the regional networks that exist in developed regions.

As such, this research is argued to have introduced some added value not only to the theory and approaches of regional networking and networks, but also to the Egyptian context, and the case study region itself.

However, there is no doubt that this research faced some limitations, as discussed in chapter one, which affected its scope and perhaps the exclusion of other elements that could have been important to its flow. Therefore, further research might be needed to fulfill these aspects. Accordingly, the research contribution and the ambitions for future research are discussed through the rest of this chapter.

10-2 Research contribution

The findings of the research gave some added values to both the theoretical aspects of networking and networks and to the Egyptian context; these contributions are discussed briefly as follows.

10-2-1 Research contribution to theory and approaches

Apart from pointing out that networking and networks had existed through history, which was clear from the examples of ancient trade routes, or from clarifying the confusion and differences between networking and networks, or from distinguishing the different levels of networking and networks that extend from global to city region level; the research identified the following aspects:

1- In relation to regional networking and networks, the following aspects were identified:

- *The three different types of networks forming the regional network* were identified as actor, functional, and physical networks. These three types are also considered to form metaphorically three layers juxtaposed in the same space. The actors' networks being the top layer organize and control the functional networks. These form the second layer, and are based on the existing assets and opportunities in relation to the different sectors of activities. While the physical networks of communication and transportation form the third layer, which supports the other two. The elements of these three networks are hosted in regional space and within the nodes of the network.

- *Networking between actors* was identified and discussed while highlighting the different success factors that should be present within actor networks, which include, among other factors: the presence of certain trust within the actors, the formation of regional pacts and agreements, the presence of sufficient capacity among actors, and the willingness to cooperate and share risks. Subsidiarity and decentralization were highlighted as necessary factors for the involvement of different government levels in networking, without which the process of networking would be difficult. At the same time it is realized that networking cannot be applied in a total separation from the hierarchical system, where there is a need for a monitoring body to alleviate the possible drawbacks of networks, such as the exclusion of actors. However, the interference by the government should not turn into an imposing role.

- *The effects of applying regional networking and networks on regional development,* where highlighted, which include: stimulating cooperation for regional development, reducing uncertainties related to development efforts, pooling of resources to confront regional disparities, creating new development potentials by sustaining innovation, and producing projects to realize regional development. In addition, such application allows for the spatial diffusion of development rather than concentrating it within few centers in the region.

- *The possible spatial impacts of networking and networks were identified,* in terms of *needs, redefining the functions of space, based on its values and autonomy, and the emergence of new types of settlements*: The needs for space evolve because of the space

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needed by: the different activity sectors involved in functional networks, the transportation and communication infrastructures and because of housing demands from the growing number of population involved in the activity sectors of the network. The redefinitions of space are mainly manifested within the reuse of the built environment for activities related to the regional network, which are different from their initial use. These redefinitions could be also of a social dimension by redefining the social fabric of a specific area in relation to its type of involvement within a network. The final possible spatial impact identified was the emergence of new types of settlements to respond to the different functions and context of the network.

- ***Networking and Networks do not cause frog leaps of development rather slow but sure development.*** As such, there are no rapid improvements expected in the region within which networking and networks are applied. The expected outcome evolves slowly by time, thus it is difficult to realize frog leaps of development through regional networks, at least not through the types of networks investigated in the case study region. This is because several conditions and success factors for networking are missing and need to be substantiated first. For example the aspects of decentralization and the principle of subsidiarity that do not exist in many developing countries including Egypt. In addition, the inclusion of all related actors to the development process could be lacking, together with a proper relationship with the different levels of the government to engage in networking. Finally, technical aspects in relation to the regional physical networks could be missing and need to be fulfilled. Most of these lacked elements are common within developing countries, e.g. Egypt, which might take some time to be fulfilled, hence prolongation of the process.

- ***Combining Networking with Hierarchical Systems,*** which contradicts the initial idea that was dominating at the eve of starting this research. Regional networking was considered to be a development approach that would replace and restructure the hierarchical systems. It became clear through the study that this is not the case, especially in countries with a traditional central system, as illustrated through the case study. Instead networking is foreseen to be combined with hierarchical systems to achieve regional development provided that some modifications are made to these systems, especially if they are well established centralized systems and are slowly being transformed as in the Egyptian case. Based on introducing the principle of subsidiarity, together with a certain level of decentralization, as argued in chapter nine, it is possible for networking between relevant actors to take place including the lower tiers of the local and provincial governments to stir development together in a bottom up approach, while at the same time maintaining a direct relation with the central government for funding, support and other related aspects. In addition of course to the monitoring role of the government discussed above.

10-2-2 Research contribution in regards to the Egyptian context
The research has tackled several issues in relation to the Egyptian context, both on the broader national level and on the level of the case study region. These aspects were not tackled before entirely or in depth in other researches; some of them are highlighted as follows.

1- Regional development on the national level
In addition to the general review and assessment of the different regional development approaches and attempts that took place over a timeline of forty years in Egypt, the research tackled some important issues that could be considered as a contribution to the general knowledge on regional development in this country, these are:

- *A new approach of regional development to the Egyptian context* is introduced in this research that is of *regional networking and networks,* which is based upon the use and development of endogenous assets, opportunities and forces. Through the four decades of regional development that Egypt went through, the majority of the development attempts were based on a top-down approach, which did not take into consideration the possibilities of cooperation within the settlements of the regions in question. These possibilities were discussed in this thesis, in such a way that diverts from the traditional top-down approach to a more bottom up collaborative approach of development, which could be a possible pilot or guide for future regional development attempts in Egypt. However, in order to rely on such an approach some modifications in the existing system are needed, as discussed earlier.

- *Critical analysis of the Egyptian planning process* was made, in order to understand how the regional plans were formulated until recently, hence, identifying the reasons for the poor results of earlier regional development plans. Through the analysis, which identified the steps of the regional planning process, it was realized that there is a divorce between regional spatial planning and regional economic planning, accordingly affecting the realization of the set plans. It was also realized that the shortcomings of the top-down approach and the exclusion of many related actors to the development process, stand responsible as well for the poor results of the regional plans.

- *Highlighting the current transformation within the Egyptian planning system*, which is geared towards decentralization, public participation, strategic planning and incorporating the bottom-up approach of development. This is done by tracking the main projects that acted as benchmarks in this slow but gradual transformation. Accordingly, with this transformation taking place, it was possible to argue that ***networking could be combined within this transforming hierarchical system***. This is proposed to take place in such a way that development visions and strategies could be formulated with the participation of all related actors, in a bottom up approach. Nevertheless the role of the state is important in terms of diffusing funds from the center to be invested in realizing the development strategies through key projects and large scale infrastructure interventions. Its role is also important in initiating and stimulating the development attempts, which in some cases would include the setting up of the regional networks, and stimulating networking between the different actor groups, in addition to ensuring the legitimacy of the process.

- *A possible positive indirect impact on the Nile Valley* could be an outcome of the application of networking and networks. As discussed in chapter nine, it is expected that there would be a gradual improvement in living standards, quality of life and the economic situation in the region, making it more appealing for people to migrate from the Nile Valley seeking a better life. A sample of this probability was shown in the case of the migrant farmers in Frafra. It is important to acknowledge that there will not be a relocation of millions of people, which was always planned in previous regional development attempts. It is argued that there might be a slow and gradual migration from the Nile Valley possibly by thousands at the beginning; however, as the region prospers the migration rates might increase. In that sense, this process could have a direct effect on easing the population pressure away from the Nile Valley, which is a desirable aim.

2- Regional development in the Western part of Egypt

Through the third part of the thesis, the possibility of applying networking and networks as a tool for regional development in the case study region was investigated. This is considered the first attempt for proposing this approach in the region.

Accordingly some aspects in relation to this investigation are considered a contribution by this research towards the development of this specific region; some are discussed as follows:

- ***A chronological analysis of previous regional development attempts in the region*** was carried out, identifying the aspects of success and failures within these plans in general. The study also tackled three different approaches for development carried out in the Frafra group of settlements. These were: the informal rural development by the migrant farmers, the master plan for Frafra city done from the center, and the recent planning by participation attempt. It is possible from such cases, to have a clear comparative study that would illustrate the benefits and shortcomings of each of these attempts to guide future attempts of development for the region.

- ***Proposing the application of networking and networks in the region*** as a new approach for regional development. This proposal was not considered before to be applied in the case study region; hence, this research could be considered as an eye opener for such possibility. In doing so, the actor groups related to the development process of the region were identified and analyzed in terms of their powers, interests and visions for the future of the region. These groups were neglected before in the making of development plans. According to the identified relationships and the presence of different assets and opportunities in the region, the possible regional networks were identified, which are the tourism's Desert Loop and the agriculture's New Valley.

- ***The emphasis on "another type" of region was made clear.*** At the start of the thesis, it was argued that this region was not an evident region. It is definitely different when compared to other Egyptian regions in the Nile Valley or to other international regions such as those of Western Europe. It is less explicit and less grandiose possibly because its assets and opportunities are not familiar or notable from the first sight. However, with the careful investigation of the region's assets, it became evident that this region has a lot to offer, in terms of culture, history, nature and unique architecture. The region might be less explicit but perhaps it is more sustainable; it possesses unique environmental and natural qualities that are not found in other regions. If these qualities are carefully considered and capitalized on, this region could become more attractive and appealing.
  But it should be taken into consideration that this type of regions is more vulnerable, it is not the usual type of a development region, which could be subject to huge investment efforts. This is because such efforts could be environmentally too disturbing, with the fact that this region is considered a fragile one, thus interventions should be carefully made. There are many regions in the world with fragility similar to this region, which cannot be considered as typical development regions. Despite that the ***precautionary principle[154],*** which is a familiar principle in environmental science, should be considered when treating these regions, in reality this is not done sufficiently. Therefore, it is a must to develop specific strategies and approaches for developing fragile regions, such as the one before hand, while following the precautionary principle and this thesis exactly did so in the study region.

- ***Introducing the concepts of new regionalism in the region.*** Since, the application of networking and networks in the study region is based on the process of visioning and setting strategic plans and actions to realize this vision, they represent a process.

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[154] The precautionary principle is defined in this way: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically" (Wingspread Conference on the Precautionary Principle, 1998).

This process requires certain factors to succeed, which are found in governance and not the typical concept of government control. The regional networks proposed in the study region are not bound (or closed) to administrative borders; they are rather open to possible cooperation with elements in other provinces and regions. For these networks to succeed, actor networks should be based on mutual trust, and the empowerment of all relevant actor groups to take part in the development process. If these aspects are compared with the concepts of new regionalism, discussed in chapter two, they present a strong reflection of them. Not to mention that new regionalism is basically a network-based system. However, it should be taken into consideration that the term new regionalism is used here in relation to regional development, which gains a progressive interpretation in relation to the discussion on the new type of regions in the previous point. As mentioned in chapter two there are other uses for this term in relation to economics, free trade and politics, but this is not the case here.

- *Highlighting the possible investment of the regional clusters of assets collectively* through the application of regional networking and networks. This focused on the importance of dealing with the region as one unit, thus, employing its neglected assets for the well being of the entire region and not only the settlements that posses these assets. As such, this idea opposes the previous approaches that were taken occasionally in this region, which focused on considering the existing assets and potentials of development only in relation to the settlements that contain them.

- *The spatial impacts that would result in case networking and networks were applied had been studied.* It has been concluded that if regional networks are to be implemented in the study region, they will have evident spatial impacts. The Desert loop and the New Valley networks are both to be realized through the implementation of physical key projects, which are to defining certain areas within the regional space into places, thus changing the image of the regional landscape. Further spatial impacts that might result from the implementation of these key projects were critically discussed based on existing evidence in the region. From the discussion it became clear that space is actually a limitless regional asset, with the exception of cultivated areas and natural protectorates, careful interventions can be made without having to worry about the scarcity of land, which is the case in the Nile valley.

- *The case of the migrant farmers from the Nile Valley to Frafra and there success in realizing rural development in the area was documented.* These farmers were able to engage in land reclamation activities, which led to rural development and the establishment of several settlements and communities in the desert. However, this case is only known within the region, with few academics and GOPP personals knowing about its dynamics. Such a case is a good example for an informal development attempt that convinced the government to support the people involved in it and to lean to their demands, eventually conducting development by co-production. It also illustrates a clear case on the capacity of social networking, which was the main motor for this attempt. Accordingly, the documentation of this case is important to spread the knowledge gained from it among the domains involved in regional development in Egypt, which could form guidelines (for the state and its planners) on how to support and stimulate similar development attempts.

10-3 Further research

This research could be considered as an "Eye Opener" on the possibility of using networking and networks as a tool for regional development in remote peripheral regions such as that of the Western Part of Egypt. It indeed tackled several aspects and issues that define this possibility and approach, yet, it stimulates the need but also the temptation of conducting further research in relation to this subject. This work is considered only the beginning which needs to be complemented by other points of research, some of which are discussed briefly as follows.

In relation to regional networking and networks and their application to achieve regional development:

- Networking between Actors
As acknowledged earlier, networking between actors is considered the driving force for the networks to function and is basically one of the main success factors for them.
Despite that this aspect was tackled in this thesis, further investigation is needed to understand and define the relationships and responsibilities of the actors in the network and how their different interests, powers, visions and values would actually define the nature of their networks especially with involvement of local and provincial governments.

- Organizational Settings
Further investigations should be made concerning the organizational settings of the different institutions and bodies involved in a network. This should be done in relation to networks within a decentralized system, while highlighting the relationships between the different public and private institutions involved in the network and also within the context of a transitional system like the one currently taking place in Egypt.
In-depth research should be made to understand the mechanisms through which networking could be combined with hierarchies as illustrated in the previous chapter and how the bodies of the existing central system can be adjusted to this situation in the Egyptian context.
In the previous chapter, the relationship between the actors' network with the upper and lower tiers of the government was highlighted only through the aspect of funding, in that sense further investigation is needed to identify the other sides of the relationship with the upper tiers such as legal aspects, development cooperation and support, and ensuring the legitimacy of the decisions of the network.

- Impact of Physical Networks
Yet another aspect should be tackled that is the possible introduction of physical networks relying on good quality modes of transportation to support the application of the network approach in developing remote and peripheral regions.
In chapter nine, several modes of transportation and physical networks were suggested including airports and railways, in that sense the obstacle of large distances would become irrelevant, especially in the case before hand. However, in order to proceed with these interventions, proper studies should be carried out, to identify the positive and negative impacts of these projects on the region, and their impacts on the national level as well.

- Other Peripheral Regions
In order to generalize the findings of this research on peripheral regions, several cases should be studied, because this research only tackled the Egyptian context. These regions could be from Egypt, e.g. North Sinai, and the Southern coast of the Red Sea, which are remote regions, or regions in other developing countries in Africa, Asia or Latin America.

In relation to the case study of the Western Part of Egypt, some other aspects should be subject for revisiting and further research, such as:

- Socio-cultural Networks in the Western Part of Egypt
As discussed earlier, it was difficult to take into consideration the different cultural and social aspects in the case study region, because of the limitations mentioned in chapter one. However, this could be a subject for an important and interesting research topic, which would investigate the socio-cultural relationships within the region, their emphasis and influence on regional networks, and their possible manifestation and impacts on space.

- The Regional Networks and the Global Dimension
Through the interviews that were presented in chapter seven, it was asked whether to link the possible networks of the region locally, globally or both. The opinions of the interviewees at that point were divided among the three options, yet the research did not go into details to investigate these possibilities.

Through the tourism network, there is an evident linkage with global tourism markets, which should exist if a successful tourism network is to be established. However in the agriculture related network this dimension was slightly tackled despite that relationships, in other agricultural communities south to the case study region, exist with other parts of the world.

Accordingly, this aspect should be further investigated, relying on comparisons with previous and current Egyptian experiences and international cases from regions that have similar settings to the Egyptian one.

It is also interesting to further investigate the possibility of applying networking and networks as a tool for regional development, yet this time within the Greater Cairo Region and within the cities of the Nile Valley; in the following manner:

- Networks in Greater Cairo Region
The Greater Cairo Region (GCR) has a long history of regional development that is usually represented by the development of a series of new cities and communities surrounding Cairo which is of an approximate population of 7.5 million inhabitants in the city alone and of about 16 millions in the region[155].

These cities were supposed to de-concentrate the population of Cairo to the desert hinterlands; however three decades after the first new settlements were built; only poor results have been generally achieved[156]. However, the settlements system of Cairo combined with these new settlements is characterized by a relative proximity that differs from those in the Western part of Egypt but similar to those of typical European networks. At the same time most of these new settlements are characterized by their specific economic bases, however, they lack adequate transportation systems.

It is therefore considered a research possibility to investigate the outcomes of the possible implementation of regional networks within these cities. This is done while addressing both the actors' networks and the physical networks within the region, and examine whether this could be a possibility for a different approach of regional development in the GCR or not.

- Networks within the Settlements of the Nile Valley
One of the opinions mentioned during the interviews was the possibility of introducing networking and networks in the settlements of the Nile Valley, which in fact are rich with historical informal relationships. The argument was that they could be used not only as a way

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[155] http://www.demographia.com/db-cairo.htm , May 2007.
[156] Serag, Yehya M., 2002, Urban Gaps in Cairo: The Case of the vacant housing stock downtown, unpublished Master thesis, KULeuven, Leuven.

to restructure the economic performance of these settlements but also as a way of service provision and delivery to the rural settlements, with references to other experiences in other places such as Turkey. Eventually this could be a point of interesting further research in terms of how it could be done and whether it is contextually suitable or not.

10-4 A final word: yes, but…

Through the thesis and ending up with chapter nine the question whether networking and networks as a tool for regional development and cooperation could be applied in the Western part of Egypt was investigated and the main hypothesis of this thesis was tested through different methods, e.g. case study, literature, etc.

The answer to the question would be *yes*, networking and networks could indeed be a tool for regional development in the Egyptian region, *but* its application would be of different nature according to the contextual settings as discussed in this chapter.

The hypothesis was tested as well, with an *acknowledgment* on the main idea that networking and networks can stir regional development in the western part of Egypt.

However, the way that this application would take place turned out to be different from the original ideas and expectations. This idea was initially geared towards a similar model of regional networking and networks as applied in developed countries, which when considered within the Egyptian context were found unrealistic, and eventually will not function. Therefore a different application of regional networking and networks was suggested to suit the context.

 This research marked the first step for the *Western part of Egypt* not to be a remote region anymore by bringing it to the center of attention and proposing a precautionary way of developing it. It might still be geographically peripheral, but it will not stay remote for long.

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Annexes

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Annex 1: List of Interviewees

Interviewees in Cairo - 2005

In conducting the field work in Egypt, fifteen interviews were held with academics, consultants and GOPP officials, those interviewees are listed below in the following manner.

I- *GOPP Officials:*

1- *Mr. Shawkey Shaaban*; he is the vice president of the GOPP with a strong participation in many development plans that were issued by the agency.

2- *Mrs. Hannaa Mekhaimer*, She is the manager of the South upper Egypt planning region in the GOPP, where some of the projects from her administration deal directly with the study area, she has been in the GOPP for almost two decades, and reflects the point of views of the second line of managers and officials in the GOPP. Most of her comments are based up on practical experience.

3- *Dr. Abdel Fadil Ismail*, one of the former top tiers in the GOPP, who was close to the decision making process in the GOPP, his background deals mainly with urban management, and his reflections are based on his interactions with the GOPP.

II- *Cairo University:*

4- *Prof. Dr. Sami Amer*, Dean of the faculty of urban and regional planning – Cairo University, he is a consultant to the GOPP and participated in several regional plans mainly those of the Nile delta, he also participated in the strategic plan for the development of the south of Egypt (including the region of study) he also proposed a scheme for networking in the Nile delta. The reflections here are both academic and from practice, though leaning more on the second.

5- *Prof. Dr. Magdy Rabee*, professor of Urban and regional planning, at the faculty of urban and regional planning- Cairo university, besides being a consultant to the GOPP, he is also a consultant to the UNDP and the ministry of planning, he is also familiar with the Egyptian legislations regarding planning and local management, his reflections were based on experience and strong knowledge of conflicting legislations.

III- *Al Azhar University*

6- Prof. Dr. Mohamed Serag, former vice dean of the faculty of Engineering, Al Azhar university, He is a consultant to the GOPP and a senior planner, with several planning projects in the South of Egypt, he is also a member in the team of consultants working on the Toshka project at the South West of Egypt. The reflections made here are combined both academic (strong background on regional planning) and practical experience.

7- Prof. Dr. Ahmad Kamal Afifi, head of the urban planning department, Al Azhar university, he has several researches and books in regional and urban planning and had worked several years as a planner in Saudi Arabia, he is also involved with the GOPP in the strategic project for upgrading the Egyptian villages, and most of the comments here are based or lean towards the academic experience, with some of the practical experience.

IV- Monufia University:

8- Prof. Dr. Faisel Abdel Maksood, professor of urban and regional planning, faculty of Engineering Monufia University, he is also a consultant to the GOPP and participated in several regional plans in the North upper Egypt region and also participated in the plan formulation for the Egypt 2017 plan, he also did several researches on finding a new settlement system in Egypt, his reflections are based mostly on his practical experience and work with the GOPP.

V- Ain Shams University (home university)

9- Prof. Dr. Shafak El Wakil, head of the urban planning department at the ASU, she is also a senior planner and a consultant to the GOPP, she participated in many projects with the GOPP ranging from upgrading to planning new cities, many of which are located in the South of Egypt, she had worked in some upgrading plans in the region of studies, and had several researches done over there. The reflections here are based on both academic and practical experience.

10- Prof. Dr. Abdallah Attia, former head of the urban planning department, Ain Shams University, and the chief planner in the NWC regional plan, he has extensive experience both practical and academic with several planning projects on different scales, his comments are based both on his academic and practical experience.

11- Professor Dr. Yohanssen Eid, professor of urban and town planning at the urban planning department ASU, the views reflected are based here on her academic experience regarding regional development.

12- Prof. Dr. Amr Attia, associate professor at the urban planning department, he is head of the planning consultant unit at the ASU and is dealing with the GOPPP in regards to the strategic national project of upgrading the Egyptian villages. His background studies deal with regional planning an development, and he is familiar with the study region, his reflections are based on both academic and practical process.

13- Professor Tamer El Khourazaty, associate professor at the urban planning department, ASU and also a practitioner, he is a registered consultant with the GOPP, and involved in planning the city of New Cairo, a sub region and the city of Toshka. He has close relationship with the Minister of housing. His reflections are based more on practice.

14- Dr Ahmed Salah, he is an assistant professor at the urban planning department Ain Shams university, his doctoral research focused also on regional planning but tackled that of greater Cairo region, he is involved in depth with several aspects dealing with regional and urban economics and planning legislations, his research work is actually focusing on these aspects. He is also a consultant to the GOPP and working extensively in the strategic plan for upgrading the Egyptian villages. His reflections are based on academic and practical aspects but more academic because of his research work.

15- Prof. Dr. Mohammed Abdel Bakey , associate professor at the urban planning department, and the chairman for the center for planning and architectural studies, a well known center in the middle East with different architectural and planning projects in Egypt and the Arab world, his research activities stress on local and urban management. The reflections made in the interview were based mainly on his practical experience.

Interviewees in 2006 in the New Valley:
- Dr. Mohamed Rafaat: Mayor of Frafra & former second deputy governor of the New Valley.
- Personals in the provincial hall of the New Valley Governorate
- Personals in the Frafra city hall
- Migrant framers in Frafra and Bahareya (20 in total).
- Hotel managers in different cities in the New Valley and Bahareya (15 in total).

Annex 2
Interview Questions posed to the academics, professionals and government officials in Cairo – September 2005

Regional development attempts in Western Egypt (New Valley)

- What is your opinion about the previous attempts of regional development in the New Valley and the desert development projects? Do you think it fulfilled its objectives? And what are the reasons for that?

- What is your opinion in the current development plan known as Egypt 2017? Do you think it is possible to fulfill its objectives? And what do you think about the proposal of constructing 44 new human settlements either from scratch or based on existing communities?

- Concerning the administrative settings for the study region, having the 3 oases in one province while the 4Th belongs to a different one, what do you think about that?

- How about the planning region, what do you think of the oases joining Assuit as a region, does it make any sense?

The regional planning process itself and the role of its involved actors

- What is the procedure for formulating a regional plan in Egypt? For example in the existing cases of the North West Coast, Sinai, Delta or the New Valley, how was the plan made?

- Who are the actors involved in the planning process? And what are the ranks of each actor (the central Gov., GOPP, local Gov., citizens, local councils, investors and so on)?

- What is the role of the planner in the process was he just a tool for planning a technocrat or was he a mediator?

- The belief that the planning process in Egypt is central (until recently), can you elaborate on that? And is there a change towards decentralization and bottom up development? And what are the external effects such as those of the UNDP and IMF?

The Case Study

(A brief introduction to the interviewees: notice that in September 2005, the orientation of the research was inclined towards the functional dimension of networks)

The research postulates the possibility of achieving a certain kind of cooperation and collaboration within the settlements of the New Valley. These would be based on two regional systems: the first one is hierarchal between the single cities and its villages, and the second is horizontal based on horizontal networks between the urban centers.

Focusing on the second type, it is postulated that this collaboration and cooperation could be achieved through integrating the services and activities within these settlements, where these activities would be administrated through another layer of networks within the local institutions and organizations and finally all would be linked together through different kinds of communications and infra structures.

- Do you think that this integration and cooperation is possible to achieve in the form of regional networks on the long run? And why? especially that the strategic plan for this region mentioned the possibility of coordination in a swift way?

- In your opinion what are the activities that could participate in the integration and cooperation process?

- What are the steps and factors that should be taken and provided to result in this integration?

- How can an integration and cooperation scheme be introduced within the different institutions and organizations of these settlements that are actually running the different activities and services? And will the ongoing shift towards decentralization help in this integration?

- If this network is established, in your opinion is it appropriate to link it with some other cities in the Nile Valley and Cairo? Or do you think it is more appropriate to link it directly with the outside world in an attempt to separate the regional economy from the national economy with all the problems that it has?

- If you think that there is a necessity in conducting fast strategic steps in order to reach this target, which steps would you propose?

- What do you think of the existing accessibility networks in this area, do you think they are sufficient?

Remarks:

Annex3
Interview questions posed to hotel owners and tourism agents in the region - May 2006

Hotel name: **City:**

-What is the type of tourists that you receive in your establishment and what are their countries of origin?

- What is the period of the tourism high season? And how many nights do the tourists stay in your hotel?

- What kind of tourism do they come for? Is it cultural, desert safari or spa tourism?

- How do they arrive to your city? Meaning which route do they take? Do they come directly from abroad to visit this city or is it a combined visit with other places in Egypt?

- How do they know about your hotel and offered activities?

- How did you start your activity? And how do you make publicity for your hotel, do you receive any support from the ministry of tourism?

- Do you have any contacts with other hotels in the region? And what kind of relation do you have with them? Do you recommend each other's facilities to visiting tourists?

- Do you think it would be possible to attract more tourists coming to Luxor or Aswan, to visit the region? Would that be done by prolonging the visit program to include the South West of Egypt together with the above destinations?

- Do you think the hotel owners and tourism agents in the different cities of the region would be willing to cooperate together to create packages for visiting, as discussed above, and how can this be done?

- Do you think the local people would accept the idea of bringing more tourists to the region? And do you think it is possible to include the traditional vernacular districts and villages in the tourism activity, and how can this be done?

- Do you think of a crucial role for the central government that assists tourism development in the region? Do you think this could be done by coordinating between the different actors involved in tourism or would its role be more physical such as investing in infrastructure projects? Why and why not?

- If you think that the central government involvement might be complicated (because of bureaucracy and red tape) do you think it is possible to achieve this development only with the involvement of private sector and NGOs, while the government initially would only monitor the process?

- In your opinion, what is the role that could be played by local governments in such a development attempt? Do you think they have enough autonomy to get involved without the central government's approvals on their decisions?

Annex 4
Questions posed to the migrant farmers in Frafra and Bahareya - May 2006

- Profession: -Age: - Occupation: Education:
- Marital status/ numbers of family members:

- How did you know about the possibilities of working in agriculture in this area?
( ) From family or friends ( ) Other ways, please explain

- What were your reasons for moving to this area and leaving the Nile Delta?
( ) Seeking a better income and life quality ( ) Unemployment in the Nile Delta
( ) Others, please explain.

- How did you start working here?

- Did you come with your family or alone? Are there any plans for them to join you?
( ) with me ( ) alone ( ) will join me later ( ) will not come

- Are you satisfied with living and working here?
( ) yes ( ) no ( ) I don't know

- What is your origin (in Egypt)?

- How long have you been living here?

- What is the area of the land that you are currently cultivating?

- How do you get your supplies of irrigation water?
At the beginning: Now:
( ) from wells dug for others   ( ) from wells dug for others
( ) from wells dug by the government   ( ) from wells dug by the government
( ) from wells you dug yourself   ( ) from wells you dug yourself
( ) Irrigation sewage water   ( ) Irrigation sewage water

- Did you face any land ownership problems? And with who?
( ) with the government ( ) Local farmers ( ) others

- How did you manage to solve these problems?
( ) through the local council ( ) with the help of the governor ( ) going to press
( ) other methods, please explain?

- Do you think the provincial and local governments managed to solve the problems?
( ) Yes, they managed to reach for a good settlement ( ) No progress

- What is the legal status of the land you are cultivating?
( ) Own it ( ) rent it ( ) illegal status

- How many years do you think you can work in agriculture in this region?

- In case the water supply for irrigation runs out, what will you do?
( ) do something else ( ) move to another place & start all over
( ) return to my home village

- How do you live?
( ) alone   ( ) with my family   ( ) with other migrant farmers

- What type of housing do you have?
( ) Permanent   ( ) temporary, explain

Remakrs:

Annex 5
Preparing a strategic plan in Egypt

It is important to explain how strategic plans are being made of Egypt, which of course can differ from those done else where. The steps in preparing a strategic plan are explained in the next few paragraphs, which are based on the terms of reference for making strategic plans for medium size Egyptian cities (GOPP, 2006), which is a program in progress between the GOPP and the UNHABITAT. These steps are currently being followed by all Egyptian planners involved in the program, of course it does not necessary mean that they all agree with their contents.

In the first stage of this program the consultants are asked to make a strategic plan to the city that enables it to deal with the national and regional changing dynamics. This is done through studying and analyzing the current situation and identifying the problems and challenges. The planners are to set a vision together with the related parties, and then making the strategic plan and identifying key priority projects to realize the vision.

The first phase of the process is preparatory, in which the related actor groups and the involved government bodies are identified and brought together with the governor. The involved parties then make a commitment to participate in the planning process; they later identify the local needs and demands through a series of meetings held by the consultants.

The second phase is about data analysis to identify the current situation of the city by carrying among other studies a comprehensive SWOT analysis. This is done with the involvement of related actor groups, including those of the civil society, business sector, city officials etc. The analysis also includes the relationship of the city with its neighboring areas and regions.

The third phase decides on the development objectives and sets up a future vision for the city, based on a strong local public participation. All the related actors are then consulted on the outcome of the vision and discuss together with the consultants the possible development projects to be taken into account, while gathering further comments on the vision through a series of workshops. The priority projects are then identified together with the possible contributions from related actor groups; this is done while setting indicators to measure the progress in achieving the set objectives.

The final phase focuses on the making of the strategic plan: The first step is to make several strategic development alternatives for the city based on its capability of maximizing the city's opportunities and strengths and minimizing its threats and weaknesses. At this moment the involved parties should select an alternative, after the consultants present the alternatives and explain how each can meet the objectives. The maps and report for the strategic plan are then made, and presented to the actor groups, who make sure that the plan confirms with the agreements that have been set earlier. Once this is done the plan is presented to the Local council to approve it or give further comments that should be fulfilled before the final approval. The final step is to hand over the final products of the plan after being approved to the GOPP which then gets it approved from higher authorities (ministry of housing)

The following stage focuses on preparing detailed plans and executive programs for the projects set in the strategic plan, which is done by the consultant in cooperation with capable and committed partners from the local actor groups.

The third stage comes later as a follow up for the implementation process of the strategic plan and its projects; this would include building capacities of the civil society to ensure the implementation of the plan and later an evaluation phase.

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Annex 6
Regional maps of the groups of settlements in the desert, showing the
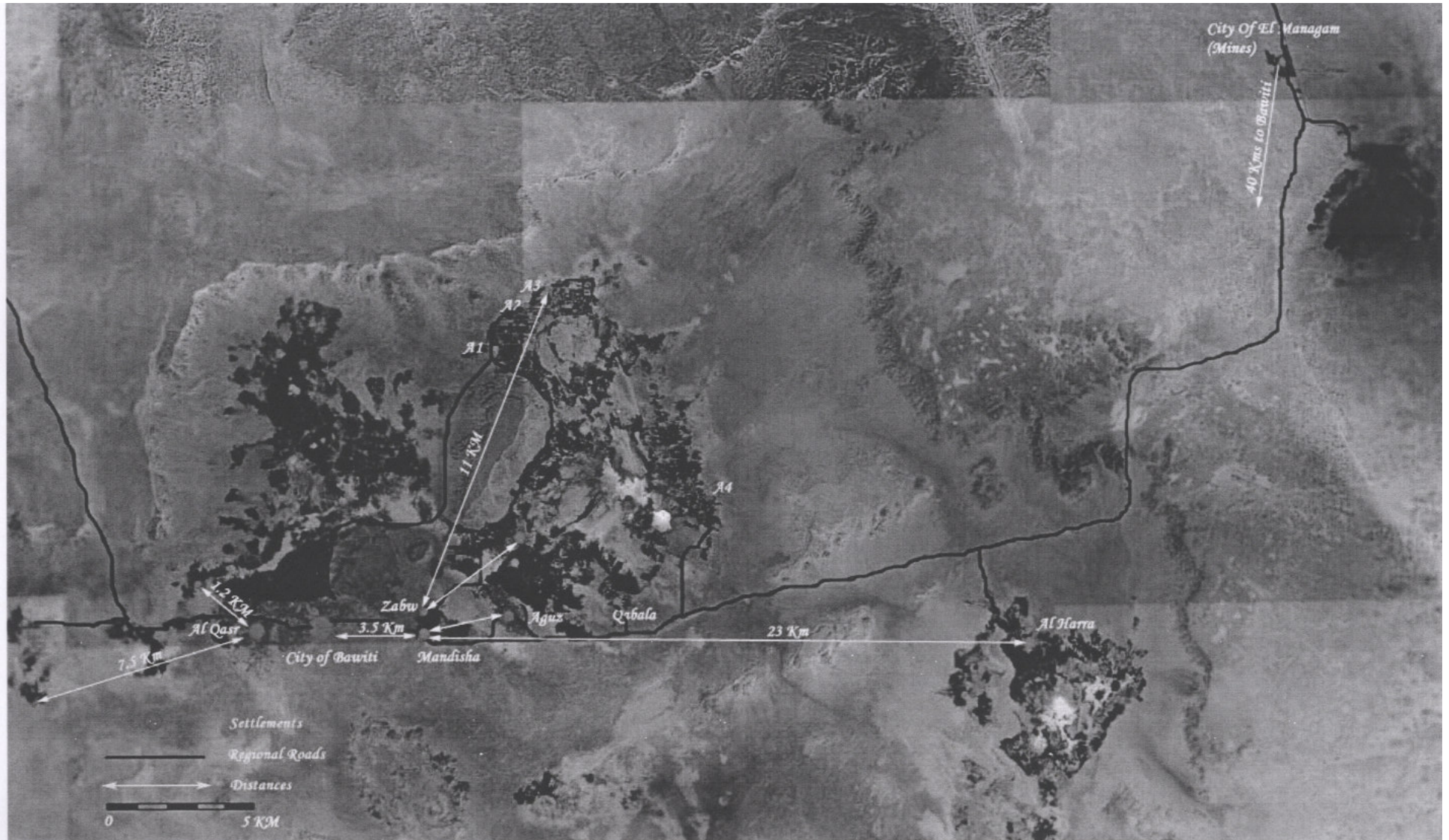physical distances between the settlements of each group

Fig. A-1: Bahareya group of settlements
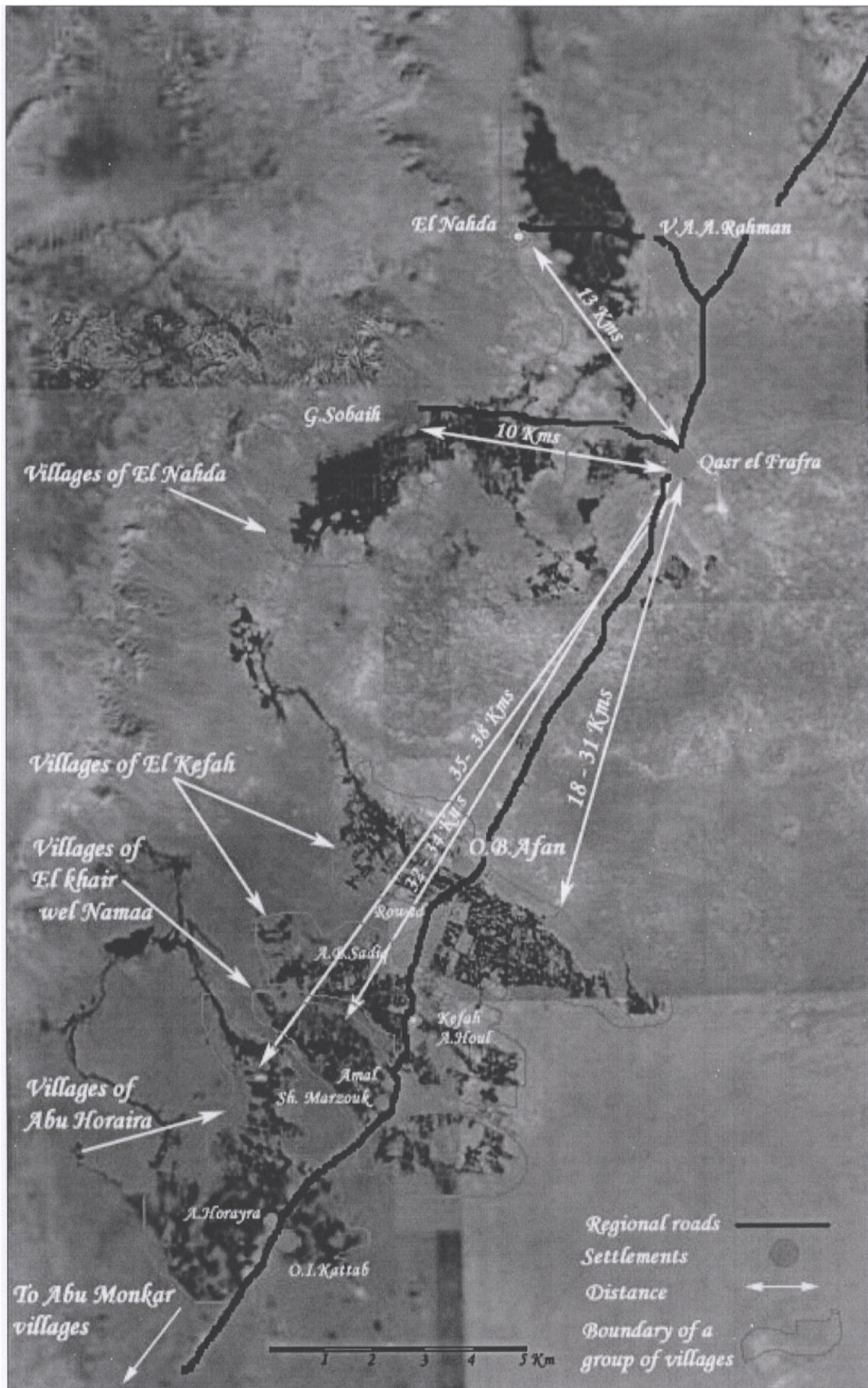Adapted by the author from Google earth 2006.

Fig. A-2: Frafra group of settlements
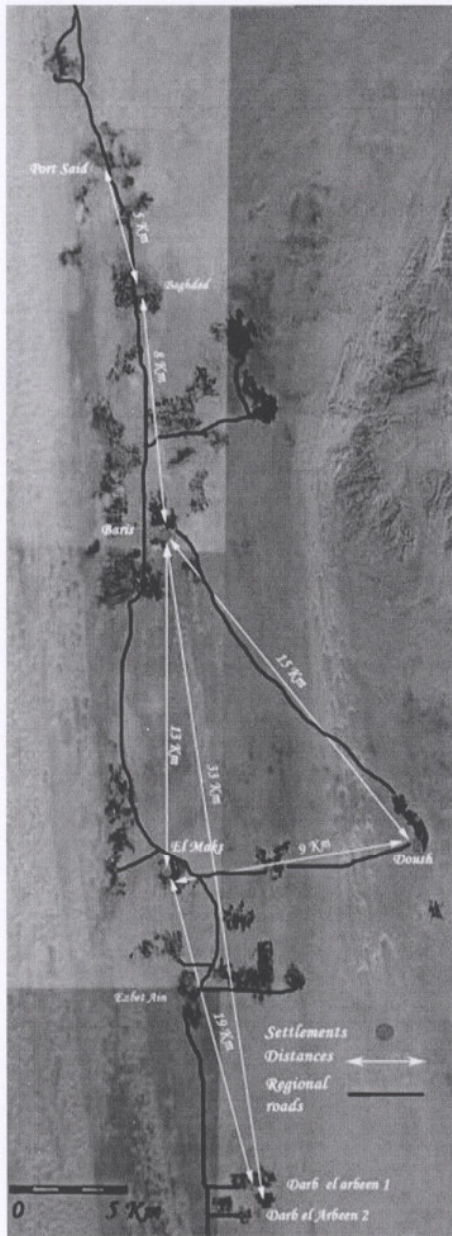Adapted by the author from Google earth 2006.

Fig. A-4: Baris group of settlements
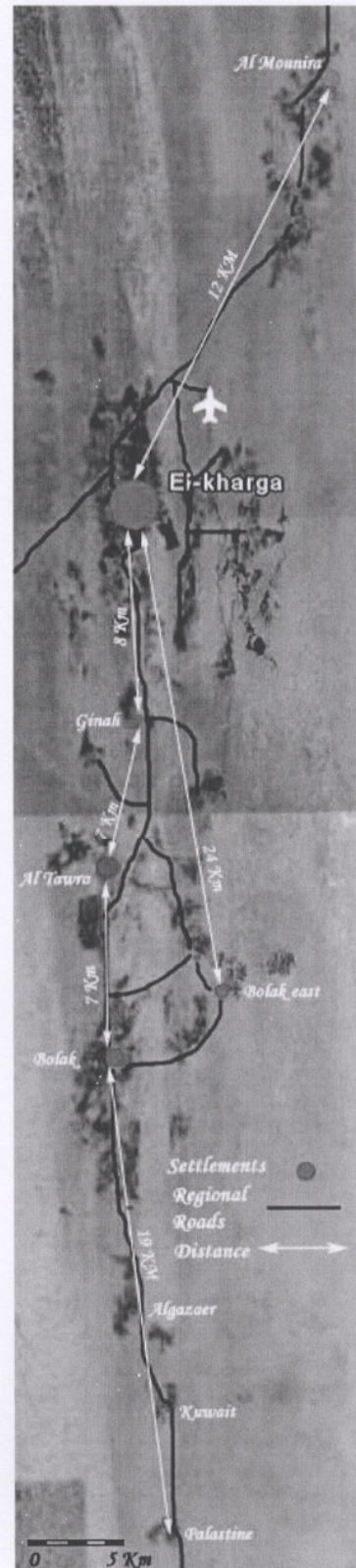Adapted by the author
from Google earth 2006.

Fig. A-5: Kharga group of settlements
Adapted by the author
from Google earth 2006.