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Rural Development Policy in Egypt towards 2025

Targeted conditional income support: a suitable option?

Gideon Kruseman
Wies Vullings (Eds.)

Centrum CGI

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landbouw, natuur en voedselkwaliteit

Koninkrijk der Nederlanden

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ABSTRACT

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Keywords: Egypt, rural development policy, targeted conditional income support

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Acknowledgements

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1 Executive summary

1.1 Introduction

The current small-scale agriculture in the Old lands of Egypt (Delta, Valley and The Fayoum) is becoming marginal if compared to the modernised agriculture in the "new lands" ("horizontal expansion" areas as e.g. in the fringes of the Western Delta). The current or traditional agriculture in the old lands is performing quite well under the existing limitations of: small holdings, labour intensive methods, traditional irrigation water application, etc. Modernisation could improve the yields and volume of output, but that would be at the expense of employment, bio-diversity and it would also imply a loss of social and cultural values in the old lands.

The project is to explore the use of "income support" for the traditional farming community, in order to preserve the socio-cultural values, bio-diversity, and general character of the old lands.

Herman van Wissen, Agricultural Counsellor of the Embassy of the Kingdom of The Netherlands in Cairo has discussed this, in broad terms, with the Egyptian Minister of Agriculture and Land Reclamation and the Minister has consented in further exploring this issue along the proposed lines. The Union of Producers and Exporters of Horticultural Crops (UPEHC) has been involved since then and they have worked very closely with Herman van Wissen, the NSCE and the consultants to carry on the mission of conditional income support to small farmers.

As well, RNE Cairo has shown interest in the development of the concept of "income support" for the traditional farmers of the old lands, as exploration for a future in which "project support" will have been (partly?) followed-up by budget support. The underlying thought is that such support could then in future be directed towards "income support" for the rural poor.

The objective of this study is to perform an initial exploration into the possibilities of using targeted conditional income support as an instrument for rural development in the old lands of Egypt. The main research question thus becomes: is targeted conditional income support a suitable instrument for rural development policy in Egypt.

In order to address this issue the following process was used. A team of Dutch consultants (from ALTERRA-WUR and LEI-WUR) prepared information concerning targeted conditional income support as applied in rural development policy in the European Union over the past three decades. Teams of key Egyptian professionals from a wide variety of scientific disciplines in collaboration with policy makers addressed a number of questions in four thematic groups. The findings from the thematic groups were placed into the context of the main research question. The outcomes of the thematic groups were discussed in a workshop with key policy

stakeholders and conclusions were drawn based on the interactive feedback from these stakeholders. This report reflects the outcome of the process described above.
The structure of the executive summary is as follows. In the second section we present the situation facing rural development in Egypt today and the challenges towards the year 2025 under the assumption of a business as usual scenario. In the third section we present an alternative vision for the situation in 2025 based on the main messages that came out the thematic groups. In the fourth section we present the lessons learned from three decades of rural development policy in the European Union. In the fifth section we discuss the possibilities of targeted conditional income support as part of a consistent and coherent rural development policy. In the sixth section we present the outcomes of the workshop with stakeholders addressing the principle question of the study. Finally in the last section we define a number of further steps to be taken, after this initial exploration of this innovative policy instrument for rural development policy in Egypt.

1.2 Egypt today and tomorrow: Business as Usual

The current small-scale agriculture in the “old lands” of Egypt (Delta, Valley and The Fayoum) is quite marginal, 80% of the landholdings are smaller than 5 Fedan (Figure 1.1 and 1.2). The current or traditional agriculture in the old lands is however performing quite well under the existing limitations of: smallholdings, labor-intensive methods, traditional irrigation water application, etc. with three harvests a year of usually high value crops produced for the local markets. Modernization of the traditional agriculture in the old lands through up-scaling of land holdings could improve the yields and volume of output, but that would be at the expense of employment, bio-diversity and it would also imply a loss of social and cultural values in the old lands. This is not a feasible, viable or desirable option. With population at 72.5 Million of which 53% is rural and current population growth rates, expectations are that with continued land fragmentation, urbanization leading to loss of fertile agricultural land (especially in the Nile Delta) by the year 2025 80% of landholdings in the old lands will be smaller than 3 Fedan, putting small scale agriculture under greater pressure than it is today. Egypt has 10.7 million of poor people and 70% of them live in rural areas with the bulk concentrated in the old land of Upper Egypt.

Over the next decades as part of globalization processes, Egypt will be incorporated more and more into the international market. This offers both threats and opportunities to current production systems. Evidence from around the world with respect to globalization processes indicate that taking advantage of comparative advantages will lead to benefits at the macro-economic level. However there is ample evidence that the poorest segments of the rural population are hardest hit in globalization processes that imply more risk and uncertainty and require safety nets that are unavailable. Current estimates indicate that traditional agriculture even applying the best technical means within the constraints of the farming system will be able to produce only for the domestic market with only 10% of the area producing high grade products for the export market. Hence 90% will be engaged in providing food security for both rural and urban segments of the population.

Figure 1.1: Small landholding, Fayoum

Figure 1.2: Small landholding, Fayoum

The agricultural systems of the old lands support the vast majority of people engaged in agriculture, many of whom belong to the poorest segments of the population. In addition these agricultural systems are vital for environmental values, bio-diversity, management of vital water resources. These vital services provided by the rural areas in the old lands are under pressure today due to urbanization, pollution and inefficient resource use. This pressure will only mount over time.

It is our feeling that under the present circumstances with the policies currently in place small scale agriculture will remain marginal and under increasing pressure with all the consequences for the environment, ecology and social fabric of the old lands. Traditional rural development orientations may alleviate some of the pressures at the margin, but will not provide a lasting solution. In this business as usual scenario we get the following picture. The Eqyptian population is growing fast and will reach 95 million inhabitants in 2025, an increase of 22 million in the coming 18 years. These people have to live and eat and that is where it clashes. Selling your land to project managers will be more profitable than to remain farming, even though the old lands currently contribute 85% of agriculture's value added. So urbanization will continue and in 2025 more of the current agricultural lands will be urbanized even with a law against building on agricultural lands in place (figure 1.3 and 1.4). With 22 million more mouths to feed and less agricultural lands changes in food security will occur. The old lands provide food for the Egyptian population as very little is exported due to quality issues with the EU (water management, pest control and produce quality), with declining land availability and increased demand food will have to come from elsewhere.. Another thread to agricultural production of the "old lands" is farm size. In 2025 farm sizes will have shrunk even more and about 80% of the farmers will have a holding of less than 3 fedan. Modernisation measures to create bigger farm size will result in higher unemployment rates. At present 31% of the workforce is engaged primarily in agriculture. Urbanization as well as increasing farm size will have a devastating effects on biodiversity and the social cultural values of the old lands, which have been in place for thousands of years. Than there is the major issue of water management. Agriculture is the biggest consumer of water, but it comes third after domestic and industrial water needs. So with growing domestic and industrial needs and additional new lands that need irrigation water, water pressure for the "old lands" will be inevitable.

In terms of water resources, the fixed amount of water that Egypt receives from the Nile will be shared among a larger and more diversified population of users. The current quota of 875 l/capita will go down by nearly 30% to 630 l/capita in 2025. Similarly, with water for agricultural use, the current 5,000 cubic m/f/year is expected to go down by 20% to 4,000 cubic m/f/year. In addirion the increased pressure on the narural resources due to population growth in the absence of enforced environmental regulations is leading to wide spread water population diminishing the capacity for using the already scarce water resources (figure 1.5). In the same vein the reduction of biodiversity and reduction of habitats for migratory birds is increasingly becoming a problem.

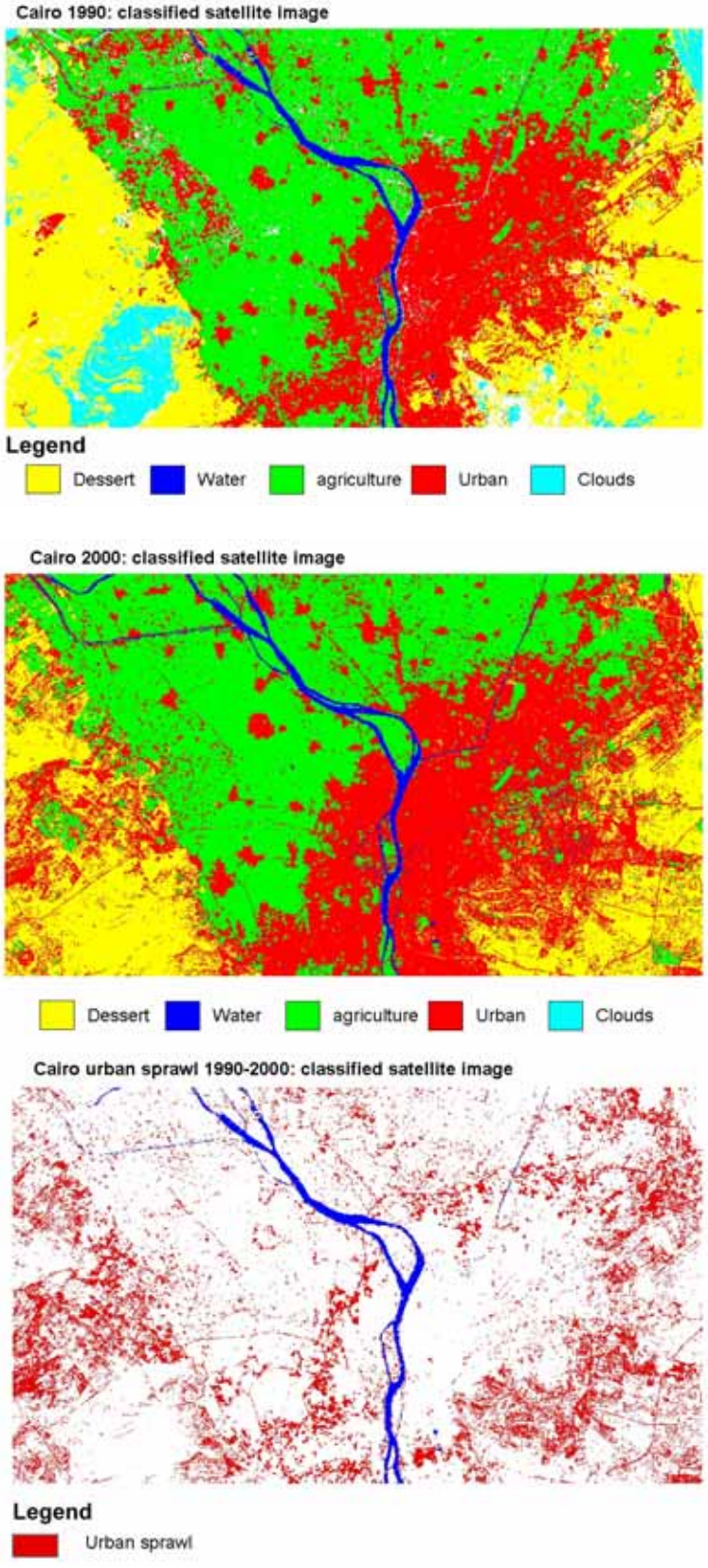

Figure 1.3: Urban sprawl around Cairo between 1990 and 2000

Figure 1.4: Small landholdings enclosed by urban areas

Figure 1.5: Water quality is becoming a major issue

On the social level, the loss of land and of the profitability of small scale farming activities, which are at the base of many rural households, will lead to a massive increase of the rural unemployment rate. Parallel to drops in income, other social, educational and health indicators are expected to follow. In 2006, 40% of the rural population was under the age of 14, in 2025, they will represent a new generation of educated young rural people looking for better opportunity than their parents.

So main problems for the old lands occurring in 2025 with business as usual:
- Urbanization and urban sprawl
- Pressure on self sufficiency
- Pressure on water quantity and quality
- Reduction of biodiversity
- Unemployment of former farmers

1.3 Vision 2025 main messages from thematic groups

For sustainable rural development we will need a different development model. This is our vision for what could be possible in the future. We divide this vision into four themes: (1) agriculture, food production and land use; (2) policy reform, population and demography;(3) ; and (4) . In agriculture general adoption of good agricultural practices can aid in sustaining high value agricultural production. Good agricultural practices entails wise use of agro-chemicals, water and other agricultural inputs. Application of technology that will keep productivity high while improving the quality of produce. If there is viable agriculture in the old lands, resources can be freed for expansion into new agricultural areas that are predominantly export-oriented. Good agricultural practices can help to ensure that environmental issues (water quality, biodiversity) do not deteriorate further or can even improve. Viable rural communities with households that can pursue sustainable livelihood strategies are less prone to land loss to urbanization.

This would in our vision lead to the following situation in the old lands

- Good production levels to supply the local market and possibly to a certain extent the export market. This is possible by preventing current agricultural land from shrinking and improving productivity of that land. The result is sustainable marginal farming
- Social impacts. With that we mean to maintain a socio-cultural infrastructure. Part of this can be achieved by promoting efficient and safe land use and promoting clustering to prevent further fragmentation). Farming is a valued and attractive profession. There are adequate safety nets to protect the poorest segments of the rural population that are usually hardest hit in globalization processes.
- Promote market oriented farming in a sustainable local economy. This includes promoting agro-industries.
- Better water management.
- Ensure geographical & ecological structure in land use to conserve and support biodiversity.

- Improvement of Human Development Indices. Implying that the gap between rural and urban is almost zero. This means that the rural poor must have adequate access to basic services and infrastructure.

1.4 Lessons from 30 years of rural development policy in the EU

The Common Agricultural Policy (CAP) of the EU was initially developed in the 1960s to ensure adequate food production by supporting farm households with production related subsidies. As agricultural productivity increased in the European Economic Community (EEC) the CAP lead to production levels above and beyond the levels required by the internal market of the member states. At the same time differences in rates of development were becoming apparent in different parts of the community. In the mid 1970s the first initiative was developed to protect farmers in less favoured areas (LFA).

Initially the LFA measure, Council Directive 75/268/EEC on 'mountain and hill farming in certain Less Favoured Areas' had one main objective and two sub objectives: to 1) 'ensure the continuation of farming', thereby 2a) 'maintaining a minimum population level' or 2b) 'conserving the countryside'. The objectives were designed to address a number of needs, specific to certain LFAs characterised by least favourable production conditions.

Since its introduction in 1975, the objectives of the LFA measure have evolved, reflecting a shifting constellation of social and environmental needs in less favoured areas, and a changing set of priorities. In general terms, the social need has lessened, and specifically, the measure is no longer seeking to address rural depopulation, although concern for the maintenance of a certain type of agricultural land use and environmental protection has increased. Furthermore, with successive amendments, Member States have been offered increased flexibility in the implementation of the measure. Member States are now responsible for fixing the levels of compensation, defining the types of production to be covered by the scheme, and modifying LFA boundaries. This has meant that in many countries an additional layer of national or regional objectives is pursued. A change and proliferation in the measure's objectives, along with a concomitant shift in the logic of intervention, suggests that the way in which the measure is implemented in different Member States through the classification criteria, the farm level eligibility criteria, and the modulation and structuring of payments, should be subject to review. Over time considerable disparities between Member States in terms of the area classified, the level of payment per beneficiary, and the effects of the measure on farm incomes with implications for its effectiveness and efficiency have emerged.

The core objectives of the LFA measure are concerned with securing public objectives. Under the most recent Council Regulation the purpose of the measure is to contribute to 'maintaining the countryside', through the continued use of agricultural land, and also to 'maintain and promote sustainable farming systems'. His is a clear case of objectives that have evolved over time. Throughout the history of

the measure payments, they have been intended to provide an effective contribution to the additional costs of agricultural activities arising from specific handicaps in classified LFAs. Farmers were to be compensated not to bring their incomes up to a given level, such as those outside the LFA, but in order to secure the continuation of appropriate agricultural management.

In general targeted subsidies in the EU have moved from production orieneted subsidies comparable to the input subsidies to the agricultural sector in Egypt today towards income support to bring targeted rural incomes up to a given level.
In principle, the EU Regulation on LFAs provides a flexible framework for an efficient system of targeted compensatory payments. The present combination of classification criteria, eligibility rules and payment structures at Member State level, results in payments being geared towards specific needs. At present income support in the EU is strongly linked to the notion of cross-compliance.

Cross-compliance **creates a link** between the full payment of support, and compliance with certain rules relating to agricultural land and to agricultural production and activity in the areas of the environment, public, animal and plant health, animal welfare and good agricultural and environmental condition. This link is expressed in concrete terms in the possibility, if the rules are not respected, of full or partial reductions of certain EU agricultural payments. The reductions shall be based on the severity, the extent, the permanence, the repetition and the intentionality of the non-compliance.

Cross-compliance has **two objectives**. The first is to contribute to the development of sustainable agriculture. This is achieved through the respect by the farmer of the rules relating to the relevant aspects of cross-compliance. The second objective is to make the Common Agricultural Policy of the EU (CAP) more compatible with the expectations of society at large. There is now a growing body of opinion that agricultural payments should no longer be granted to farmers who fail to comply with basic rules in certain important areas of public policy.

1.5 Targeted conditional income support as part of a coherent consistent rural development policy

Single farm payments in the EU and the LFA measure both can be considered targeted conditional income support. In this section we will briefly highlight the main components of this concept.

1.5.1 Definition of the concept

A measure to provide target groups with additional funds as part of their livelihoods. These funds are made available on condition that the beneficiaries comply with certain well-defined rules related to the objectives of the public entity providing the funds. Potential eligibility is defined by criteria defining the target group.

1.5.2 Why

The primary reasons to apply such an instrument as part of a rural development and agricultural sector policy are:

- Support of target groups without introducing subsidies that have a too large distortion effect on markets.
- Payment for non-tradable environmental, and socio-cultural services.
- Public private partnership in achieving public goals through private benefits. It entails the provision of public goods

Although the idea is to introduce support in a way that is not market distorting, there always remains an important risk in this respect. Especially in the absence of well defined non-tradable environmental and socio-cultural services that are provided in return for the income support. This is why these main reasons must coincide in order for effective income support to come into place.

1.5.3 How

How can targeted conditional income support be effectively implemented is the key issue in light of the remarks made in the previous section.

- Clear a priori eligibility criteria. By this we mean that the target groups should be very clearly defined.
- Clear ex-post conditions. By this we mean that the conditions that the target population have to meet in order to receive the income support should be well defined.
- Clearly defined legal framework. This type of innovative policy instrument usually requires adaptation of existing legal frameworks in order for it to function properly.
- Clearly defined operational rules. The operational rules include the methods by which compliance with the conditions for the income support can be monitored and controlled. This is one of the most crucial components of the operationalisation.
- Consistency across levels. Because we are dealing with an instrument aimed at individual households or groups of households while trying to solve (conflicting) social, economic and environmental problems there are different levels of aggregation to take into account. There are the general policy goals that are set at the highest level. In the case of the EU these are the general conditions for certain measures. At a more decentralized level, in the case of the EU, at the level of member states, specific additional conditions can be set within the overall framework. These conditions must be consistent with the aims of the measure.
- Appropriate incentive structure. In order for effective use of the instruments the incentives for participation should be appropriate. Ideally there is a direct link between the services rendered by the farms and the rewards obtained. With the LFA measure in order to prevent land abandonment, payment was linked to continued agricultural land use. In places where management of the rural landscape was more important, payments were linked to good agricultural practices.

- Provision of essential services. Very often there are underlying problems in terms of inadequate provision of essential public and/or private services that drive farmers to practices that are undesirable from society's point of view, hence the provision of these essential services should be partv and parcel of the implementation of the measure.

1.6 Workshop conclusions

The current small scale agricultural is under pressure due to population growth, land fragmentation and low quality of life in rural communities. Currently, 80% of the landholdings in the Old Lands are smaller than 5 feddan. They are performing quite well with three harvests of high value crops per year, mainly produced for local markets. However, the conditions the farmers work in are harsh. Modernization of the traditional agriculture in the Old Lands through up-scaling of landholdings could improve yields and volume, but would be at the expense of employment and bio-diversity, and would imply loss of social and cultural values. Up-scaling is therefore not a desirable option. The question then is : could marginal farming be made sustainable?

The challenge is to find a way to safeguard employment, bio-diversity and the social-cultural values of the Old Lands while at the same time improving the position of the farmers and promoting good farming practices. Rural development policy in the EU has developed over the past thirty years into a consistent and coherent framework. One of the key elements in this framework is the instrument of conditional income support targeted at specific groups. The income support is conditional on the compliance with rules, regulations, and indicators for public objectives. In other words specific farmers are remunerated for providing environmental, socio-cultural services and other public goods.

Prior to the workshop, teams of key experts in four different fields (1. water and environmental issues, 2. agriculture, 3. pocerty alleviation and employment and 4. demography and policy reform) discussed the issues at hand with respect to sustainable rural development concluding:

- The need to make rural areas attractive to prevent extreme urbanization
- The need for widespread adoption of good agricultural practices
- The need for wise management of water quality and water quantity. This is important because water is life and water is scarce.
- The need to strengthen rural organizations to combat poverty, enhance rural income generation within and outside agriculture.

Question

The main question raised during the workshop was the following: Is targeted conditional income support a suitable policy instrument to enhance sustainable marginal farming in the old lands of Egypt.

Answer
The answer to this question was provided after discussions with workshop participants, namely that conditional income support can be a suitable instrument in providing the extra incentive to address the challenges to rural development mentioned above.

Some similarities with the situation in the EU were noted, namely the emphasis on good agricultural practices and the need to preserve vibrant and viable rural communities. Important differences with the situation in the EU were highlighted as well, namely the need to work through farmers' organizations instead of individual farmers and the emphasis on water quality and quantity instead of environmental issues as a whole.

1.7 Next steps

Recommendations towards a national rural strategy
The outcome of the workshop and further meetings with the Egyptian ministry of Agriculture and EU resulted into the following recommendations. The recommendations are formulated as next steps to be taken to come to a national rural strategy and consists of two tracks:

1. Formulating a national rural strategy of which income support will be one of the most import measures. This national rural strategy will be necessary for implementing income support as a policy instrument at national level.
2. Setting up a pilot for income support

The steps to be taken to formulate a national rural strategy are:

1. Creating further political support for the concept of targeted conditional income support(2007)
2. Investigate whether the EU framework for rural development policy can be adapted to the Egyptian situation in terms of a national strategy for rural development policy to allow the introduction of new policy instruments(2007)
3. Workshop organized by Ministry of Agriculture and EU on a national policy for rural development in Egypt (November 2007)

The steps to be take to set up a pilot for targeted conditional income support:

1. Mobilization of resources to prepare the implementation of targeted conditional income support (2007)
2. Preparation of the implementation of targeted conditional income support (2008)
    a. definition of necessary institutional arrangements
    b. Set up a general organizational model
    c. Define a legal framework
    d. calculation of budgetary implications
    e. Formulate general eligibility criteria
    f. Definition of policy goals and related income support conditions
    g. definition of monitoring and control system
    h. Perform a risk analysis

        i. Perform a macro economic analysis
3. Ex-ante evaluation of possible targeted conditional income support pilot projects (2008)
4. Prepare pilot study income support
        a. Area selection
        b. Set up specific organizational model
        c. Ensure adequate institutional arrangements and legal basis
        d. budgeting
        e. Formulate specific eligibility criteria
        f. Definition of income support conditions
        g. definition of monitoring and control system
        h. Perform an ex-ante risk analysis
5. Carry out pilot income support (2009-2010)
6. Evaluate pilot and plan further actions (2010-2011)

2 Introduction

2.1 Context

The current small-scale agriculture in the Old lands of Egypt (Delta, Valley and The Fayoum) is becoming marginal if compared to the modernised agriculture in the "new lands" ("horizontal expansion" areas as e.g. in the fringes of the Western Delta). The current or traditional agriculture in the old lands is performing quite well under the existing limitations of: small holdings, labour intensive methods, traditional irrigation water application, etc. Modernisation could improve the yields and volume of output, but that would be at the expense of employment, bio-diversity and it would also imply a loss of social and cultural values in the old lands.

The project is to explore the use of "income support" for the traditional farming community, in order to preserve the socio-cultural values, bio-diversity, and general character of the old lands.

Herman van Wissen, Agricultural Counsellor of the Embassy of the Kingdom of The Netherlands in Cairo has discussed this, in broad terms, with the Egyptian Minister of Agriculture and Land Reclamation and the Minister has consented in further exploring this issue along the proposed lines.

As well, RNE Cairo has shown interest in the development of the concept of "income support" for the traditional farmers of the old lands, as exploration for a future in which "project support" will have been (partly?) followed-up by budget support. The underlying thought is that such support could then in future be directed towards "income support" for the rural poor.

2.2 Objectives of the study

The objective of this study is to explore the possibilities of a policy for a dynamic rural area of Egypt and to describe an action plan towards the development of such a policy

The purpose of this study is to advice the Egyptian Ministry of Agriculture and Land Reclamation on preservation of socio-cultural values, bio-diversity, and general character of the old lands through income support to Egyptian small holders in the old lands.

2.3 Process of the study

The process that resulted in this report can be divided into three main phases:
1. Defining the proposal

2. Thematic working groups discussions
3. Workshop
4. Report

Proposal

In 2006 the idea for a policy towards dynamic rural areas for the Old lands of Egypt was launced by the Agricultural Counsellor of the Embassy of the Kingdom of The Netherlands in Cairo and suggested to the Dutch ministry of Agriculture as a small project. The objective of this project was to formulate a roadmap towards such a policy. Two Dutch experts were selected, one on the field of income support, and one in the field of the Dutch national rural development policy. Together with the Embassy of the Kingdom of The Netherlands they defined the workplan for the project. The Embassy of the Kingdom of The Netherlands hired local Egyptian consultants (North South consultancy exchange (NSCE)) and they finalized the workplan.

Thematic group discussions

NSCE selected four main thematic fields related to the subject of the study and contracted local key experts on those four thematic fields:

- Dr. Hamby El-Sayed for Agriculture, food production and Land Use
- Dr. Mohsen El-Arabawy for water management, biodiversity and environment
- Dr. Heba El-Laithy for Employment, income and marketing
- Dr. Mohamed Fetouh Aboul-Atta for policy reform, population and demography

The key local expert invited other experts in their field of expertise to participate in a preparatory meeting. Before the preparatory meetings the Dutch and Egyptian experts met and created together an overall vision for the ideal situation for the old lands in Egypt for 2025. During the preparatory meetings the experts elaborated on the current situation, the expected situation in 2025 if business continue to be as usual, the ideal situation in 2025 and the requirements that were needed to achieve this ideal situation for their own theme. The meetings resulted in 4 position papers.
During the first visit of the Dutch experts they also met with a number of important stakeholders to discuss the idea of targeted conditional income support and to invite them for the upcoming workshop.

Workshop

The 29th of May a workshop was held in Cairo with the central question: is targeted conditional income support a suitable policy to make the old lands of Egypt dynamic rural areas? 120 persons participated. In appendix 1 the agenda of the workshop and in appendix 2 the list of participants is enclosed. Presentations were given by several persons to illustrate the context of the study. In the afternoon the participants were divided into four thematic groups and they discussed the central question. The results of the discussions were summarized in four thematic SWOT analyses. The press release and an article in the largest Egyptian newspaper (Al Ahram) reporting on the workshop are respectively in appendix 3 and 4.

Report
All documents produced (vision, position papers, SWOT analyses, speeches and presentations) led to the roadmap. The roadmap is a three page document that describes briefly the context of the study and the necessary steps towards national rural strategy for the old lands of Egypt (appendix 5). The final report is a more elaborated document that contains all the produced documents including a chapter on syntheses and conclusions.

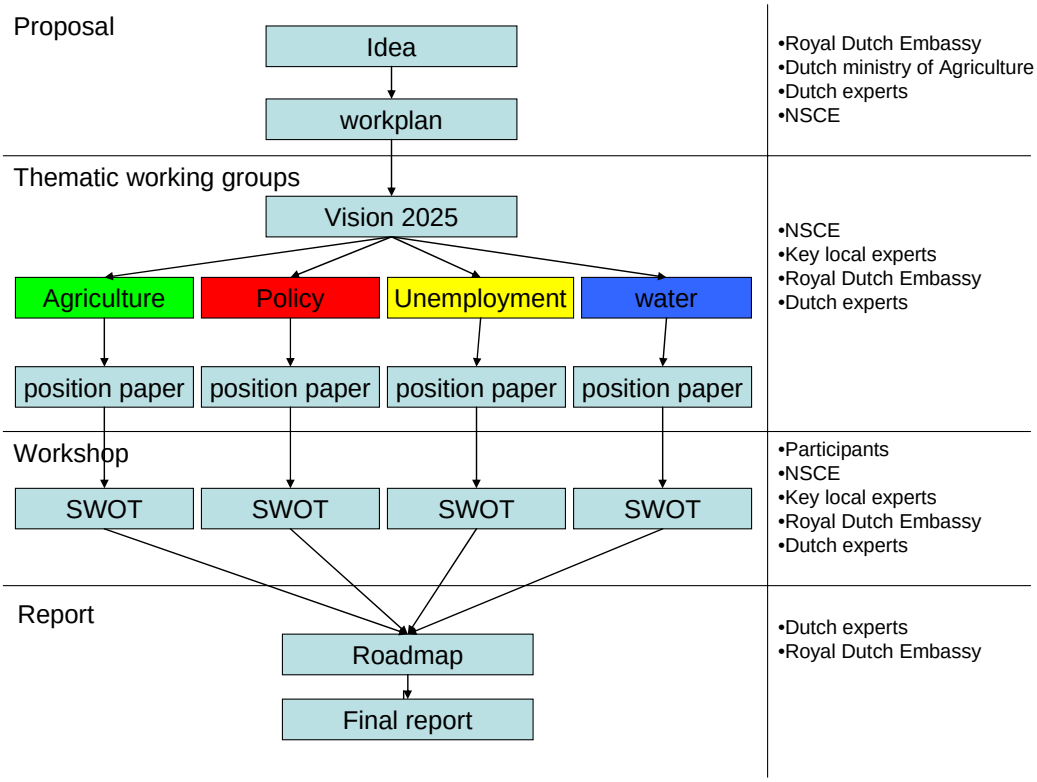

Figure 2.1: Process of study

2.4 Structure of this report

In Chapter three the current situation of the old lands of Egypt is described. During the workshop this was presented by Dr. Osama Kheir El-Din (Chairman, UPEHC). Chapter four contains a vision for the Old Lands of Egypt for 2025 with business as usual and an optimistic vision and the requirements to achieve such a vision. This chapter was presented during the workshop by Dr. Ahlam El-Naggar. In the fifth chapter dr. Gideon Kruseman describes 30 years of Rural development policy for marginalized areas in the EU. The position paper on Agriculture, food production and land use by Prof. Hamdy El Sayed, Dr. Zaki El Sawi Lashine forms the sixth chapter. Chapter 7 contains the position paper on policy report, population and demography by Dr. Mohamed Fetouh Aboulata. The position paper on water management, biodiversity and environment by Dr. Mohsen Al Arabawy is given in chapter 8. Chapter 9 contains the position paper on employment, income and

marketing by Prof. Heba El Laithy. The syntheses and conclusion of this study form chapter 10 and the recommendations follow in chapter 11.

3 Current situation

By Dr. Osama Kheir El-Din (Chairman, UPEHC)

Agriculture has been a fundamental sector for the Egyptian economy since time immemorial. Despite intensive periods of industrialization, Egypt continues to depend largely on agricultural production: 31% of the labour force is found in the agricultural sector and 18% of the GDP is generated by agricultural production.
The Nile Valley is endowed with fertile soil, water abundance and a favourable climate which supports the highest yield in the world of several cereals and horticultural crops. Nearly 80% of Egypt's agricultural land is found in the Nile Valley, yet deteriorating environmental conditions along with increasing rural population, constant demand for new urban and rural residential areas and escalating levels of domestic, industrial and agricultural related pollution are threatening the future of Egypt key natural assets, its biodiversity and its cultural and social fabric.

Furthermore while agriculture remains one of the pillars of Egypt's economy, in practice very limited money is currently being invested into rural areas to support its growth at the same pace as the national growth. The result is that rural areas continue to lag behind urban centres in almost all social and economic indicators as well as in terms of availability of basic infrastructure, vital for the rural human and economic development. Egypt has 10.7 million of poor people and 70% of them live in rural areas with the bulk concentrated in the old land of Upper Egypt.

The Government of Egypt has undergone major economic policy changes since the early 90s thus boosting an impressive economic growth. The new market oriented policy has had a critical impact on the deregulation of the agricultural sector, giving to farmers wider options for their cropping pattern and their marketing channels. A new successful export driven agricultural production has emerged within the past decade. It is dominated by medium to large size farms, mainly located in the new and the new old land outside the Nile Valley. The participation of the small farmers in the growth of agricultural export remains marginal and may remain as such in the future in view of the poor support services and infrastructure in the old land. Agricultural support centres providing a range of essential processing and packaging facilities, advisory services, market information are needed along transportation infrastructure and facilities and relevant transfer of technology in the old land to help reverse the economic marginalizing trends among the small farmers population in the old land. UPEHC has set ambitious yet realistic plans to support the development of vital services for small farmers of the Nile Valley to improve their socio-economic conditions and increase their share in Egypt export of Agriculture products.

The government is committed in reducing poverty down from 19.26% in 2005 to 6% by 2022, thus focusing its effort towards the rural population where 70% of the poor people is found. The government has also made a clear development policy choice to ensure a sustainable development process. Agricultural modernization has been

selected as a mean to boost agricultural production, so it is of a critical importance to examine what are the prevailing trends in the rural areas in Egypt and define a comprehensive strategy which can articulate the goal of economic growth with the goal of sustainable human and environmental development. A quick review of past trends and current patterns may give important insights as to what the rural areas and economy of Egypt is heading to and raise critical questions about what type of development scenario to do and what to avoid to ensure that the best and most effective long term and short term sustainable development strategies are put in place in rural areas.

3.1 Diagnostic trends and gaps in Rural Egypt

Egypt's total population boomed from a little over 59.3 million in 1996 to 72.5 million in 2006. The proportion of population growth between urban and rural areas stayed around 57% and the total rural population has reached 41.54 million, indicating an increase of 7.6 million within 10 years.

Illiteracy rate in rural Egypt has decreased from 49.6% to 36.6% over the last decade, yet data desegregated by gender show a high illiteracy rate among rural women. On the positive side, the new generation of rural children has had better access to education as the prevalence of persons with secondary and higher educational level has sharply increased from 16.4% to 29.3% between 1996 and 2006.

In terms of health, rural infant mortality rates continue to be higher than the national average reaching 45.2 per 1000. Though the contraceptive prevalence rate in rural area has improved, yet is remained relatively low with 56% in 2005.

Of Egypt's total land area, only 3.3%, or 7.9 million feddan is cultivated. This area is distributed as 79% old lands, 12% new lands and 9% deserts and oases. While the reclamation of new lands for agricultural purposes has made great way in Egypt in the last 30 years, the old land in the Nile Valley is the object of rapid transformation into residential areas.

Egypt's water resources consist almost exclusively of the Nile River. The current quota of water resources per person is 875 l/capita and 5,000 cubic m/f/year for agricultural use. Increasing pressure from agricultural land and from a fast growing population may mean that water may not be available in enough quantities to cover the optimal needs in the future.

In 2006, 11 million out of 19.9 million, being 55% of the Egyptian working population live in rural areas. Of the working population living in rural areas, 51.1% work in agriculture and more specifically while the remaining work in trade, services and small scale rural industries. Many of those who work in agriculture do complement their revenues derived from agricultural activities, with informal employment in non agricultural economic activities. The rural poor can be classified

as tenant farmers and small scale farmers, landless labourers and unemployed women and youth, all of them are dependent upon agriculture for their livelihoods.

3.2 Projecting into the future (2025)

Current trends indicate that unless a radical change is made at the policy level, rural areas will be continue to suffer from declining human development indicators and severe environmental deteriorations, reaching a very unfavourable position by 2025. If current land use trends continue, an additional million feddan of agricultural land will be transformed into residential land in the Nile Valley. Furthermore, while about 80% of the farm size is less than 5 feddans today, in 2025 80% of the parcels will be less than 3 feddan in the old land. The trend towards fragmentation of the farm size will reduce the potential financial return from small scale farming and increase the value of the land for non agricultural purpose. The loss of the old land will be balanced, as per the governmental plans, by a sharp increase of reclaimed land in the desert areas, moving from 1.5 million in 2006 to 6 million feddan in 2025 through the development of large scale modern agricultural production.

In terms of water resources, the fixed amount of water that Egypt receives from the Nile will be shared among a larger and more diversified population of users. The current quota of 875 l/capita will go down by nearly 30% to 630 l/capita in 2025. Similarly, with water for agricultural use, the current 5,000 cubic m/f/year is expected to go down by 20% to 4,000 cubic m/f/year.

On the social level, the loss of land and of the profitability of small scale farming activities, which are at the base of many rural households, will lead to a massive increase of the rural unemployment rate. Parallel to drops in income, other social, educational and health indicators are expected to follow. In 2006, 40% of the rural population was under the age of 14, in 2025, they will represent a new generation of educated young rural people looking for better opportunity than their parents. Unless profitable alternative income generating activities are created in rural areas and agricultural sector, the large majority of the expected 50 million inhabitants of rural areas will be joining the ranks of unemployed and poor population and creating potential risks for political and social unrest. It is clear therefore that a new vision and a forward looking strategy are necessary to create and maintain dynamic rural areas where adequate revenues can keep the rural population in marginal farming area and secure the long term sustainability of the rural biodiversity.

Needs for a vision and a national strategy for sustainable marginal farming (2025)
The model of agricultural modernization promoted by the Egyptian government as a key to higher production and increase economic growth applies essentially in the new land. In a parallel track, more attention and effort should be devoted to develop an alternative model for the development of the old land to maintain the sustainability of the marginalized small scale farming as a source and a drive of rural employment and a sustainable livelihood. The old land development model should offer a decent lifestyle to those who will choose to stay in the rural areas of the old land, and

provide a solid foundation for the conservation of the old agriculture land, its environmental, social and cultural biodiversity.

The time is ripe in Egypt to prevent further losses of agricultural land and economic marginalization of farming in the Nile valley by taking action with a new policy for poverty alleviation in rural areas which supports a decent economic, social and cultural life to rural population and nurture the principle of environmental sustainability as a pillar in the national rural development. Such an integrated approach addresses the main issues affecting rural development as interrelated and interdependent.

The challenges that Egypt is facing today with fast changes in agricultural production, land use and rural economic activities is not unique. The experience of other countries indicates that creative, well-studied alternatives towards the sustainable development of rural areas can be realistic and successful. The European Union for example has been experimenting with an income support policy to marginal farming areas for the past 30 years. This policy, which consists of subsidies and tax cuts in favour of small farmer communities, has been applied in various ways depending on the location and situation of the farmers. The results have been that these communities remain in their traditional villages and continue their agricultural practices, which would normally have proved less than profitable without the direct and indirect financial support of the European Union program. .

The EU committed itself in 2001 to halting biodiversity loss and to restore habitats and natural systems by 2010. In this context, opportunities for financing of biodiversity actions outside the EU are provided under the new EU Development Policy. In light of this, UPEHC took the initiative in cooperation with the Embassy of the Kingdom of The Netherlands to launch a process that can facilitate the formulation of a national policy for dynamic rural areas. Furthermore, as the policy formulation process may be necessarily long, calling for a wider participation of national stakeholders, immediate measures under a pilot intervention are suggested to maintain the momentum. It is proposed to elaborate a pilot intervention to experiment a customized approach of the EU income support program in Egypt in order to provide a ground for demonstration and learning.

4 Vision 2025

By Dr. Ahlam El-Naggar

4.1 Introduction

Over the next decades as part of globalization processes, Egypt will be incorporated more and more into the international market. This offers both threats and opportunities to current production systems. Evidence from around the world suggests that there are allows many opportunities if countries take advantage of their resources in a sustainable way. The current small-scale agriculture in the Old lands of Egypt (Delta, Valley and The Fayoum) is quite marginal, 80% of the landholdings are smaller than 5 Fedan. However, the current agriculture in the old lands is performing quite well under the existing limitations of: smallholdings, labour-intensive methods and traditional irrigation water application with three harvests a year of usually high value crops produced for the local markets. The situation in Egypt if the business as usual scenario can be summarized as follows:

- Urbanization pressure will push back farming further and further.
- Pressure on self sufficiency will increase as agriculture in the old lands becomes less attractive.
- Pressure on water quantity and quality will increase due to increased demands from urban and industrial sectors, while increased pollution threatens human and ecological health and agriculture itself.
- Agricultural systems are vital for environmental values, bio-diversity and management of vital water resources. These vital services provided by the rural areas in the old lands are under pressure today due to urbanization, pollution and inefficient resource use. This pressure will only increase over time.
- Increase of unemployment of former farmers since the absorption capacity of non-agricultural sectors is traditionally lower than that of agriculture.

Under the present circumstances with the policies currently in place small scale agriculture will remain marginal and under increasing pressure with all the consequences for the environment, ecology and social fabric of the old lands. Traditional rural development orientations may alleviate some of the pressures at the margin, but will not provide a lasting solution.

The time is ripe in Egypt to prevent further losses of agricultural land and economic marginalization of farming in the Nile valley by taking action with new policies for poverty alleviation in rural areas.

4.2 Vision 2025 towards sustainable rural development

For sustainable rural development we will need a different development model. This is our vision for what could be possible in the future. In agriculture general adoption of good agricultural practices can aid in sustaining high value agricultural production.

Good agricultural practices entails wise use of agro-chemicals, water and other agricultural inputs. Application of technology that will keep productivity high while improving the quality of produce. If there is viable agriculture in the old lands, resources can be freed for expansion into new agricultural areas that are predominantly export-oriented. Good agricultural practices can help to ensure that environmental issues (water quality, biodiversity) do not deteriorate further or can even improve. Viable rural communities with households that can pursue sustainable livelihood strategies are less prone to land loss to urbanization.

This would in our vision lead to the following situation in the old lands

- Good production levels to supply the local market and possibly to a certain extent the export market. This is possible by preventing current agricultural land from shrinking and improving productivity of that land. The result is sustainable marginal farming
- Social impacts. With that we mean to maintain a socio-cultural infrastructure. Part of this can be achieved by promoting efficient and safe land use and promoting clustering to prevent further fragmentation). Farming is a valued and attractive profession. There are adequate safety nets to protect the poorest segments of the rural population that are usually hardest hit in globalization processes.
- Promote market oriented farming in a sustainable local economy. This includes promoting agro-industries.
- Better water management.
- Ensure geographical & ecological structure in land use to conserve and support biodiversity.
- Improvement of Human Development Indices. Implying that the gap between rural and urban is almost zero. This means that the rural poor must have adequate access to basic services and infrastructure.

4.3 What is required to reached that situation

In order to reach that situation steps will have to be taken to direct rural development policy in another direction:

- There is a need for public awareness of the issues at hand. It is important that all Egyptians understand the gravity of the situation.
- Public awareness is necessary but not sufficient. It is imperative to have a system of social and economic incentives in place. These incentives can be positive (income support) or negative (restrictions) or a combination of both.
- Institutional arrangements include appropriate legal frameworks and clear rules of the game.
- Organizational structures necessary for allowing the institutional arrangements to work need to be in place.

4.4 How can we achieve this

The European Union has had 3 decades of experience in Rural Development Policies using different approaches than have been Applied in Egypt so far, as was

explained by the previous speakers. We have learnt that conditional income support can simultaneously alleviate poverty and achieve other important public objectives. Even in places where such support is new as can be seen in the new member states of the European Union. It can be a powerful instrument to maintain and support the traditional values of rural communities and improve both quantity and quality of production and the provision of environmental services. Some form of income support as an incentive for steering development in the desired direction seems to be a promising road to achieve the vision we have for Egypt's future. We hope that the workshop participants will provide valuable inputs into this process.

The implementation of such measures can be adapted to the local circumstances. In the case of Egypt this implies that the general framework of the approach must coincide with the national rural development plan. In addition the approach should be linked to the ongoing decentralisation process. In this process the governerates have a responsibility in the implementation of public policy. The framework that has proved successful in the European Union is very diverse in its implementation at the local level. The central authorities set a few simple rules and at local level there is space to target the incentives to reach the objectives. Where in the European Union the local level are the member states, in our case the local level consists of the governerates.

The present project explores the use of such "income support" for the traditional farming community, in order to preserve the socio-cultural values, bio-diversity, and general character of the old lands in Egypt. Such income support can replace ineffective or inefficient support measures targeted at the rural population such as subsidies on inputs (water and agro-chemicals), price support, etc. It is important to take into consideration the institutional arrangements in place at present and how these can be used or transformed to accommodate "income support" for the traditional farm households.

Implementation of Income support would imply a redirection of funds as part of the ongoing reform process in which the government is rethinking the role of different types of subsidies and support measures targeted at the rural poor.

5 30 years of Rural development policy for marginalized areas in the EU

5.1 Introduction

The European Union (EU) is a supranational and intergovernmental union of twenty-seven states and a political body. It was established in 1992 by the Treaty on European Union (The Maastricht Treaty), and is the de facto successor to the six-member European Economic Community founded in 1957. Since then new accessions have raised its number of member states, and competences have expanded. The EU is one of the largest economic and political entities in the world, with a total population of 494 million and a combined nominal gross domestic product (GDP) of €11.6 (US$14.5) trillion in 2006. The Union is a single market with a common trade policy, a Common Agricultural/Fisheries Policy, and a Regional policy to assist underdeveloped regions.

The EU has evolved from a Western European trade body into the supranational and intergovernmental body that it is today. After the Second World War, an impetus grew in Western Europe for institutional forms of cooperation (through social, political and economic integration) between states, driven by the determination to rebuild Europe and eliminate the possibility of another war between Germany and France. Eastern Europe, on the other hand, was largely within the Soviet sphere of influence, and only in the 1990s did the EU see central and Eastern European states as potential members.

The creation of a common agricultural policy was proposed in 1960 by the European Commission. It followed the signing of the Treaty of Rome in 1957, which established the Common Market. The six member states individually strongly intervened in their agricultural sectors, in particular with regard to what was produced, maintaining prices for goods and how farming was organised. This intervention posed an obstacle to free trade in goods while the rules continued to differ from state to state, since freedom of trade would interfere with the intervention policies. Some Member States, in particular France, and all farming professional organisations wanted to maintain strong state intervention in agriculture. This could therefore only be achieved if policies were harmonised and transferred to the European Community level. By 1962, three major principles had been established to guide the CAP: market unity, community preference and financial solidarity. Since then, the CAP has been a central element in the European institutional system.

The Common Agricultural Policy (CAP) was forged in 1970 and largely governed production, processing, and marketing of agricultural products under the former European Commission (EC). By the middle 1970s, European Economic Community (EEC) directives bestowed preferential treatment to agriculture in mountainous and other less-favoured areas, with the purpose of mitigating the exodus of agricultural production and rural population. The justification was found in maintaining

economic, social, and environmental balance between "winning" and "losing" regions in the globalizing economy. These directives represented the first explicitly territorial considerations in European agricultural policy. Policy-makers introduced further rural policy innovations centred on agricultural and economic development as the EU expanded. They committed Structural Funds to aid in the structural adjustment of regions that would otherwise have been left behind.

Rural development policy in the EU has evolved differently than that in other northern countries. If we compare the EU to the US the following picture emerges. The European Union has taken much more conscious steps toward the development of a rural policy framework. European farmers and other rural interests have done a better job of winning the hearts and minds of the urban population. Perhaps it has to do with the fact that, unlike their American counterparts, most European farmers live in villages, not dispersed on the land. They might thus better understand that commodity price supports do not provide them or their neighbours with a potable water supply or off-farm employment opportunities.

Furthermore, the sustainability of the tourist economy of many of the EU countries lies in their ability to preserve their ancient rural villages, farms, and cultural assets, assets that define the cultural identity of many European citizens. European rural development policy seems to be born of a shared sense of values and interests among rural farm and non-farm constituencies as well as urban constituencies. These values also appear to be shared across member states, much more so than within and amongst the states of the US.

Like the EU., U.S. rural policy began with agricultural policy, but subsequently evolved beyond agriculture. However, in the U.S. rural policy has remained predominantly focussed on agricultural production where the balance in Europe has moved more and more to non-agricultural aspects of rural life.

5.2 LFA measure

The Common Agricultural Policy (CAP) of the EU was initially developed in the 1960s to ensure adequate food production by supporting farm households with production related subsidies. As agricultural productivity increased in the European Economic Community (EEC) the CAP lead to production levels above and beyond the levels required by the internal market of the member states. At the same time differences in rates of development were becoming apparent in different parts of the community. In the mid 1970s the first initiative was developed to protect farmers in less favoured areas (LFA).

Initially the LFA measure, Council Directive 75/268/EEC on ‘mountain and hill farming in certain Less Favoured Areas’ had one main objective and two sub objectives: to 1) ‘ensure the continuation of farming’, thereby 2a) ‘maintaining a minimum population level’ or 2b) ‘conserving the countryside’. The objectives were

designed to address a number of needs, specific to certain LFAs characterised by least favourable production conditions.

Since its introduction in 1975, the objectives of the LFA measure have evolved, reflecting a shifting constellation of social and environmental needs in less favoured areas, and a changing set of priorities. In general terms, the social need has lessened, and specifically, the measure is no longer seeking to address rural depopulation, although concern for the maintenance of a certain type of agricultural land use and environmental protection has increased. Furthermore, with successive amendments, Member States have been offered increased flexibility in the implementation of the measure. Member States are now responsible for fixing the levels of compensation, defining the types of production to be covered by the scheme, and modifying LFA boundaries. This has meant that in many countries an additional layer of national or regional objectives is pursued. A change and proliferation in the measure's objectives, along with a concomitant shift in the logic of intervention, suggests that the way in which the measure is implemented in different Member States through the classification criteria, the farm level eligibility criteria, and the modulation and structuring of payments, should be subject to review. Over time considerable disparities between Member States in terms of the area classified, the level of payment per beneficiary, and the effects of the measure on farm incomes with implications for its effectiveness and efficiency have emerged

The core objectives of the LFA measure are concerned with securing public objectives. Under the most recent Council Regulation the purpose of the measure is to contribute to 'maintaining the countryside', through the continued use of agricultural land, and also to 'maintain and promote sustainable farming systems'. His is a clear case of objectives that have evolved over time. Throughout the history of the measure payments, they have been intended to provide an effective contribution to the additional costs of agricultural activities arising from specific handicaps in classified LFAs. Farmers were to be compensated not to bring their incomes up to a given level, such as those outside the LFA, but in order to secure the continuation of appropriate agricultural management.

5.3 Current situation with regard to rural development policy in the EU

Mid 2003, the EU adopted a fundamental reform of the Common Agricultural Policy (CAP). The reform is completely changing the way the EU supports its farm sector. The new CAP will be geared towards consumers and taxpayers, while giving EU farmers the freedom to produce what the market wants. In future, the vast majority of subsidies will be paid independently from the volume of production. To avoid abandonment of production, Member States may choose to maintain a limited link between subsidy and production under well defined conditions and within clear limits. These new "single farm payments" will be linked to the respect of environmental, food safety and animal welfare standards. Severing the link between subsidies and production will make EU farmers more competitive and market

orientated, while providing the necessary income stability. More money will be available to farmers for environmental, quality or animal welfare programmes by reducing direct payments for bigger farms.
Key elements of the reformed CAP are:

- A single farm payment for EU farmers, independent from production; limited coupled elements may be maintained to avoid abandonment of production,
- this payment is linked to the respect of environmental, food safety, animal and plant health and animal welfare standards, as well as the requirement to keep all farmland in good agricultural and environmental condition ("cross-compliance"),
- a strengthened rural development policy with more EU money, new measures to promote the environment, quality and animal welfare and to help farmers to meet EU production standards that started in 2005,
- a reduction in direct payments ("modulation") for bigger farms to finance the new rural development policy,
- a mechanism for financial discipline to ensure that the farm budget fixed until 2013 is not overshot,
- in addition there are ongoing revisions to the market policy of the CAP. This reform will also strengthen the EU's negotiating hand in the ongoing WTO trade talks:
  - asymmetric price cuts in the milk sector: The intervention price for butter will be reduced by 25% over four years, which is an additional price cut of 10% compared to Agenda 2000, for skimmed milk powder a 15% reduction over three years, as agreed in Agenda 2000, is retained,
  - reduction of the monthly increments in the cereals sector by half, the current intervention price will be maintained,
  - reforms in the rice, durum wheat, nuts, starch potatoes and dried fodder sectors.

With regard to the implementation of the reform, the Commission has chosen to do this by way of three Commission Regulations.
Pillar 1 covers the provisions concerning cross-compliance, controls and modulation. The provisions with regard to cross compliance are one of the new key elements in the CAP reform, which make the future Single Farm Payment dependant on the farmers respecting public health, animal health, environmental and animal welfare, EU norms and good agricultural practice.
Pillar 2 embodies the key element in the reform of introducing a Single Farm Payment, where the payment will no longer be linked to production (decoupling), allowing the farmers to have their incomes ensured and steering their production towards the needs of the markets and the demands of the consumers. Payments will, however, only be paid in full if the above cross-compliance provisions are respected. At the same time decoupled payments will mean that a major share of our support to agriculture is moved from the trade distorting classification under WTO rules (Amber Box) towards the minimal or non-trade distorting category (Green Box).
Pillar 3 covers those areas of support, which in the future are still product specific, or where the Member States have the option to retain a certain element of support coupled in the future. Such possibilities have in particular been foreseen in the area

of animal premia (beef and sheep), where the concern with regard to the effect on production and decoupling has been most pronounced.

Since the reform of the Common Agricultural Policy, Rural Development is playing an increasingly important role in helping rural areas to meet the economic, social and environmental challenges of the 21st century. Rural areas make up 90 percent of the territory of the enlarged EU and the new legal framework points more clearly to the direction of boosting growth and creating jobs in rural areas – in line with the Lisbon Strategy – and improving sustainability - in line with the Göteborg sustainability goals.

The future Rural Development policy 2007-2013 will focus on three areas in line with the three thematic axes laid down in the new rural development regulation: improving competitiveness for farming and forestry; environment and countryside; improving quality of life and diversification of the rural economy.

A fourth axis called "Leader axis" based on experience with the Leader Community Initiatives introduces possibilities for locally based bottom-up approaches to rural development.

The new programming period provides a unique opportunity to refocus support from the new rural development fund on growth, jobs and sustainability. The European legal framework being established Member States can now elaborate their national strategy plans and rural development programmes before submitting them to the European Commission.

For each set of priorities, the EU strategic guidelines are suggesting key actions. Member States shall prepare their national rural development strategies on the basis of six community strategic guidelines, which will help to:

- identify the areas where the use of EU support for rural development creates the most value added at EU level;
- make the link with the main EU priorities (Lisbon, Göteborg)
- ensure consistency with other EU policies, in particular cohesion and environment;
- accompany the implementation of the new market orientated CAP and the necessary restructuring it will entail in the old and new Member States.

The six strategic guidelines are:

1. Improving the competitiveness of the agricultural and forestry sectors
2. Improving the environment and the countryside
3. Improving the quality of life in rural areas and encouraging diversification
4. Building Local Capacity for Employment and Diversification
5. Translating priorities into programmes
6. Complementarity between Community Instruments

5.4 LEADER

LEADER is a Community Initiative for rural development, which started in 1991 with LEADER I. It continued with LEADER II (1994 – 1999) and a third phase LEADER+ (2000 – 2006).

LEADER+1 has been designed to help rural actors, considering the long-term potential of their local region. Encouraging the implementation of integrated, high quality and original strategies for sustainable development, it has a strong focus on partnership and networks promoting the exchange of experience. A total of € 5,046.5 m for the period 2000-2006 was committed, of which € 2,105.1 m funded by the EAGGF Guidance section and the remainder by public and private contributions.

LEADER+ is structured around three actions (1) Support for integrated territorial development strategies of a pilot nature, (2) Support for cooperation between rural territories, (3) Networking.

The LEADER+ method encourages rural actors to realise development strategies characterised by a set of specific principles, which distinguish them from the approach to rural development that is normally followed in mainstream Rural Development programmes funded from the European Agriculture Guarantee and Guidance Fund (EAGGF). These specific LEADER+ features, which are mentioned in the Commission Notice to the Member States regarding LEADER+, consist of the bottom-up and area based approach, partnership, integrated and sustainable pilot development strategies around specific themes, inter-territorial and transnational co-operation and networking ().

5.5 Targeted Conditional income support

Single farm payments in the EU and the LFA measure both can be considered targeted conditional income support. In this section we will briefly highlight the main components of this concept.

5.5.1 Definition of the concept

A measure to provide target groups with additional funds as part of their livelihoods. These funds are made available on condition that the beneficiaries comply with certain well-defined rules related to the objectives of the public entity providing the funds. Potential eligibility is defined by criteria defining the target group.

5.5.2 Why

The primary reasons to apply such an instrument as part of a rural development and agricultural sector policy are:

- Support of target groups without introducing subsidies that have a too large distortion effect on markets.
- Payment for non-tradable environmental, and socio-cultural services.
- Public private partnership in achieving public goals through private benefits. It entails the provision of public goods

Although the idea is to introduce support in a way that is not market distorting, there always remains an important risk in this respect. Especially in the absence of well defined non-tradable environmental and socio-cultural services that are provided in return for the income support. This is why these main reasons must coincide in order for effective income support to come into place.

5.5.3 How

How can targeted conditional income support be effectively implemented is the key issue in light of the remarks made in the previous section.

- Clear a priori eligibility criteria. By this we mean that the target groups should be very clearly defined.
- Clear ex-post conditions. By this we mean that the conditions that the target population have to meet in order to receive the income support should be well defined.
- Clearly defined legal framework. This type of innovative policy instrument usually requires adaptation of existing legal frameworks in order for it to function properly.
- Clearly defined operational rules. The operational rules include the methods by which compliance with the conditions for the income support can be monitored and controlled. This is one of the most crucial components of the operationalisation.
- Consistency across levels. Because we are dealing with an instrument aimed at individual households or groups of households while trying to solve (conflicting) social, economic and environmental problems there are different levels of aggregation to take into account. There are the general policy goals that are set at the highest level. In the case of the EU these are the general conditions for certain measures. At a more decentralized level, in the case of the EU, at the level of member states, specific additional conditions can be set within the overall framework. These conditions must be consistent with the aims of the measure.
- Appropriate incentive structure. In order for effective use of the instruments the incentives for participation should be appropriate. Ideally there is a direct link between the services rendered by the farms and the rewards obtained. With the LFA measure in order to prevent land abandonment, payment was linked to continued agricultural land use. In places where management of the rural landscape was more important, payments were linked to good agricultural practices.
- Provision of essential services. Very often there are underlying problems in terms of inadequate provision of essential public and/or private services that drive farmers to practices that are undesirable from society's point of view, hence the

provision of these essential services should be partv and parcel of the implementation of the measure.

5.5.4 Pitfalls and threats

- Financial feasibility of support. Any form of payment, whether direct payments or indirect subsidies are costly. The cost must be bourn by someone. In the past costs were bourn primarily by the tax-payers. While this remains an important source of funds, increasingly there is a tendency to move towards payments by beneficiaries of the services provided by the rural households. While this will not replace general tax-funded payments it is a way to make the support more financially viable.
- Social acceptance (discriminatory measures). Social acceptance of income support measures is very important, especially when it is targeted and not everyone profits. There should be a widespread acceptance of the eligibility criteria and an understanding that these payments are done as compensation for certain services rendered.

5.5.5 Opportunities

- Revolving funds. The use of revolving funds where farmers pay for the use of scarce environmental resources, and these proceeds are used for targeted conditional payments to the same farmers, allows for simultaneous addressing quantity and quality aspects of critical resource use.
- PES brokerage. The notion of payments for environmental services where the state serves as a broker between rural household providing essential services and beneficiaries of those services. In annex 5 a full explanation is provided with reference to the implementation in developing countries.
- Effective cross-compliance. Cross compliance is a very important notion in the common agricultural and rural development policy in the EU. It entails simultaneously meeting requirements for a variety of policy goals. In the case of the EU: environmental standards, food safety standards, good agricultural practices. Individual member states can add additional criteria to the cross-compliance rules. This way more coherent rural development policy emerges.

References

Cooper, T., Baldock, D., Rayment, M., Kuhmonen, T., Terluin, I., Swales, V., Poux, X., Zakeossian, D. and Farmer, M. (2006) An evaluation of the less favoured area measure in the 25 member states of the European Union. Brussels: European Commission, DG AGRI.

European Commission, DG AGRI. (2004) CAP explained. Brussels: European Commission, DG AGRI.

Lamie, D. and A. Kovalyova (2002) Rural development, Euro-style? Choices: Spring, 2002.

Schuh, B.,H. Tödtling-Schönhofer, H. Wimmer, R. Lukesch, J.-P.Vercruysse and S. O'Grady (2006) Synthesis of mid-term evaluations of LEADER+ programmes Final Report. Brussels: European Commission, DG AGRI.

6 Agriculture, food production and land use

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6.1 Introduction

In the late 1980s, Egypt began to adopt structural adjustment and stabilization programmes in an effort to restructure the poorly performing centrally-planned economies and reduce mounting fiscal imbalances. These programmes included price reforms, external and domestic trade liberalization, the reduction of budget deficits, inflation stabilization, privatization and a general effort to promote private-sector-led growth. In some instances the reforms paid off in the 1990s, with the gross domestic product (GDP) per capita showing a positive trend and declining poverty rates. However, the number of poor people continues to increase as the population grows. Egypt has about 10.7 million poor people, and 70 per cent of them live in rural areas. Most of the country's rural poor people live in the north and in Upper Egypt, where there are higher rates of illiteracy and infant mortality, poorer access to safe water and sanitation, and larger numbers of underweight children. Women in general and particularly those who head 20 per cent of all households, are principally disadvantaged. About 80 per cent of girls are taken out of school before the age of ten to do farm work.

Economic growth had been recently affected by a combination of factors including poor foreign direct investment (FDI) inflows, falling tourism revenues due to geopolitical uncertainty, poor trade performance, and the slow pace of structural and social reforms.

Agriculture is of major importance to the country's economy. The sector employs about 30 per cent of the labour force and accounts for some 18 per cent of gross domestic product (GDP). Agricultural activities are concentrated in Nile Valley, Delta, Fayoum and their desert fringes, the Oldlands, which make up only 3 per cent of the total land area. In the Nile Valley soils are fertile, the climate allows for a year-round growing season, and water is available for irrigation throughout the year. Given such favourable conditions, yields in the old lands are among the highest in the world for several cereal and horticultural corps. Despite this, Egypt remains a food-deficit country.

The agricultural sector is in transition from being heavily controlled by the state to being largely influenced by market forces. Until the early to mid-1990s state involvement in the agricultural sector meant interventions such as price support measures, consumer food subsidies, production and area quotas, and trade barriers to support food self-sufficiency. While farmers often received input subsidies (for credit, seed, fertilizer and fuel), they were also obliged to sell their output to state monopolies at fixed prices, which, were either below or above market prices.

As has been the case worldwide, the system of subsidies and market controls distorted resource allocation and led to stagnation in the agricultural economy. In the wake of liberalization programmes, subsidies have been abolished or rationalized, prompting a slow adjustment by the agriculture sector to a new environment of free market enterprise and globalization.

One of the greatest constraints hindering agricultural growth and self-sufficiency is availability of irrigated land in a country that receives hardly any rainfall. With almost 97 % of the population confined to the Nile Valley and Delta and their desert fringes, Egyptians have long been concerned with increasing cropped acreage and reclaiming land for agriculture. About 11 % of the poor people live in rural Lower Egypt, Nile Valley, Delta, Fayoum and their desert fringes, the Oldlands.

Rural poor people typically include:
- tenant farmers and small-scale farmers
- landless labourers
- unemployed youth and women

They depend on agriculture for their livelihood, and agriculture in this area does not provide them with sufficient food security and income. Farmers in this part of the country have very small landholdings, they cultivate crops that have a low market value and generate limited income. They are unable to finance the higher costs and greater risks of growing non-traditional crops. Small farmers, micro-enterprises and rural women do not have access to a microfinance system that responds to their needs. Alternative employment opportunities are lacking because of the limited development of small enterprises and micro-enterprises. Local markets are underdeveloped and marketing infrastructure, such as transport, storage and grading facilities, is poor. Producers' associations are not well organized.

Compounding past policies, which brought environmental degradation but little assistance to the rural poor, are the natural resource and institutional constraints currently facing the agricultural and rural sectors. Natural resource constraints include a fragile land base, declining soil fertility, limited water resources and frequent climatic shocks (very vulnerable to severe weather conditions). Equally challenging are the institutional and policy constraints that exist such as unequal land distribution and insecurity of land tenure, poor and unsustainable management of common pool resources, low public sector investment in physical and social infrastructure in rural areas, gender imbalances and few grass-roots and civil society organizations.
This calls for a new focus by the private sector on agricultural support services, with an important role for the government as facilitator and provider of an enabling environment. The involvement of government, civil society (including non-governmental organizations (NGOs) and donor agencies will be crucial in helping the rural poor benefit from this transformation.

6.2 Diagnostics

The following features were idle to describe the situation of the Oldlands:

- There is lots of variation in the crop pattern according to the outcome of each crop – there is no commitment towards a specific production cycle.
- The land ownership suffer from fragmentation and there is a loss of 20% of the land used in irrigation canals and partitions between farmers lands.
- The irrigation system used is flood irrigation.
- Labour / feddan is variable depending on the crop type.
- There is a great loss of water used for irrigation.
- The following statistics summarize the land use in Egypt: 80% variable crops – 85% flood irrigation – 1 labour / feddan – 60% land holdings – 40% land rental – 25% using regular production cycle. (for detailed land use areas and production numbers see appendix 7)
- Other statistics on land ownership have been collected as follows:
  - Farmers' ownership which is less than or equal to 5 feddan represents 80% of the total land ownership.
  - Farmer's ownership ranging from 5 – 10 feddan represents 10% of the total land ownership.
  - Farmer's ownership being more than 10 feddan represents 10% of the total land ownership.
- Lack of coordination among different organizations working in the Agricultural field
- The WTO agreement has resulted in free trade between Egypt and the EU countries, but this was not positively reflected on small growers.
- Current irrigation methods lead to low production quantity and quality.
- 80% of the crops are classified unqualified for the export markets, and exporters don't buy those crops, therefore they only go to local market.

6.3 SWOT Analysis

Strengths	Weaknesses
• Expanding to new land reclamation with required infrastructure. • Distribution of reclaimed areas to graduated youth and small farmers. • Reforming the agriculture policy to cope with the actual needs for local and export market. • Support to production inputs through the agricultural cooperatives. • Adaptation of new irrigation systems. • Identifying suitable crops for each governorate. • Formation of growers' associations to adopt good production practices and techniques for safe and good marketable product.	• Fragmentation of land ownership. • Losing fertile land to civil construction. • Cultivating of high value crops which affect other strategic crops (cotton-wheat-rice-maize). • Old cultivation methods are still in use. • Low output of the production process due to high inputs. • Low market prices for some strategic crops. • Resources (water and environment) deterioration. • Lack of organizational and institutional coordination. • Lack of information about the needs of exportable markets. • Scarcity and high cost of trained agricultural labour.
Threats	**Opportunities**
• Unsecured land tenure. • Increased unemployment among graduates and women. • Deterioration of land resources due to natural conditions. • Environmental and natural resources degradation. • Disable the use of modern agricultural practices with the increase in land fragmentation. • Lack of qualified and trained labour. • Lack of awareness on sustainable agriculture practices. Institutional and organizational conflict regarding developmental aspects i.e. poverty, gender...etc. • Low private sector participation in developmental aspects.	• Preservation of land resources. • Enable participatory approach practices among human resources. • Capacity building improvement • Activate the role of private sector to resolve social and organizational conflict. • Formation of growers' associations for commodity improvement. • Renewable of environmental & natural resources. • Adoption of a sustainable agricultural production system. • Promoting appropriate technologies for marginal and dry land areas. • Application of a sustainable livelihood approach. • Improvement of social infrastructure. • Increase the role of gender in development. • Activation of the UPEHC role in the service of small farmers. • Reduction of poverty indices.

6.4 Business as usual

Rural areas - the Old lands - are not exempted from the impact of globalization. Global trends affecting agriculture are particularly significant in this respect. They have undergone vital socio-economic and technological changes marked by globalization, economic liberalization and political decentralization and by the information and communication sector.

Yet, large numbers of the rural poor gained little from this achievement; and progress has slowed down. In many areas, technological changes did not take place;

the potential of existing technology seems to be nearly exhausted. New challenges arise, from land lost to erosion, salinity and urban expansion, and from water depletion and diversion to towns.

The declining support for agriculture is extremely damaging to efforts to reduce poverty and hunger. Food staples, cereals like wheat, rice and maize and roots and tubers like yam are central in the rural poor food economy and struggle for survival. Food staples provide the bulk of the output and income of the rural poor and are their main source of calorie intake. The urban poor also spend much of their incomes on purchasing food staples. However, these alternatives are generally complementary to technical progress and are unlikely, without it, to generate an adequate rate of poverty reduction.

Major adjustments are needed in agricultural, environmental and macroeconomic policy, at national level to create the conditions for sustainable agriculture and rural development. The major objective of sustainable agriculture and rural development is to increase food production in a sustainable way and enhance food security. This will involve education initiatives, utilization of economic incentives and the development of appropriate and new technologies, thus ensuring stable supplies of nutritionally adequate food, access to those supplies by vulnerable groups, and production for markets; employment and income generation to alleviate poverty; and natural resource management and environmental protection. The priority must be given to maintaining and improving the capacity of the higher potential agricultural lands to support an expanding population. However, conserving and rehabilitating the natural resources on lower potential lands in order to maintain sustainable man/land ratios is also necessary. The main tools of sustainable agriculture and rural development are policy and agrarian reform, participation, income diversification, land conservation and improved management of inputs. The success of sustainable agriculture and rural development will depend largely on the support and participation of rural people, national Governments, the private sector and international cooperation, including technical and scientific cooperation.

The forecasted trends in agriculture, food production and land use will lead to:

- Establishing unions for each commodity crop gathering represented by producers in the same field.
- Land fragmentation will increase in the future due to inheritance of the family members.
- Preservation of agriculture lands from civil construction.
- Reclamation of new lands and distributing among small farmers with land ownership not less than 5 feddan each for better application of agriculture policy.
- Establishing modern packing houses.
- Expanding the transportation techniques (air – marine – land).
- Contracting with small growers in favour of the local exporters.
- The creation of a special fund to compensate the farmers (insurance against disasters).
- Establishment of a project on the pattern of drainage.

- Future development on the small scale farmers would reflect positively if properly applied.
- Technical support, training and establishment of packing and cooling infrastructure would give a great support to the farmers.
- Recommending that UPEHC would carry on the responsibility of contracting with small farmers based on the needs of exporters.
- Thus, what happens to the output and will these changes suffice to improve the living standards of the rural population and lessen the urban-rural gap or will the rural sector remain in isolation and be also in ten years time home of the poor?

6.5 Optimistic Vision

A number of options are available in responding to these trends. Given the scarcity of resources it is important that they are chosen carefully. If they fail to respond, rural areas will become even more marginalized than they are already.

The expected situation in the year 2025 will be:

- Agricultural lands increase due to the reclamation of new lands.
- Application of Sustainable agricultural practices i.e. Good agricultural Practices (GAP).
- Adoption of a Sustainable livelihood approach (SLA), to eradicate poverty and social conflict.
- Upgrading irrigation methods to conserve the local water resources especially in the old valley locations.
- Increase of local production by 20% if irrigation systems are modified and a better quality crops is expected.
- As for the land use, there will be big investors own large areas, meanwhile land fragmentation will increase among small farmers if not clustering them in groups.
- Total population by 2025 will reach 150 million, that will result in building villages outside the rural cultivation areas, where agricultural areas will reach 10 million feddan due to the land reclamation.
- Upgrading agricultural mechanization.
- Farmers will start cultivating the high value added crops, nevertheless the economical importance. Some crops have low income consideration such as (cotton-wheat-rice).
- Decrease in human contribution for agriculture due to modern mechanization in the farms, which will reflect on unemployment among the agricultural workers.
- Land use will decrease while land rental will increase due to the high prices of the agricultural lands.
- Increase in agricultural production and income.
- Increase in volume of exported crops.
- Increase in crop areas due to crop intensification.
- Income increase for those farmers applying the GAP technology and their crops are marketable crops.
- This will reflect in the form of positive impact on the socio-cultural values.

Main stakeholders organizations such as relative ministries, UPEHC, FAO and private and public companies can provide farmers with technical assistance or financial assistance to achieve their goals; therefore it results in foreign exchange income. In addition some of those organizations provide credit and investment opportunities.

6.6 Discussion

Agriculture needs to be intensified to meet future demands for commodities and to avoid further expansion onto marginal lands and encroachment on fragile ecosystems. Increased use of external inputs and development of specialized production and farming systems tend to increase vulnerability to environmental stresses and market fluctuations. There is, therefore, a need to intensify agriculture by diversifying the production systems for maximum efficiency in the utilization of local resources, while minimizing environmental and economic risks. Where intensification of farming systems is not possible, other on-farm and off-farm employment opportunities should be identified and developed, such as cottage industries, aquaculture and fisheries, non-farm activities, such as light village-based manufacturing, farm commodity processing, agribusiness, recreation and tourism, etc.

This can be realized by applying a number of options that are available i.e. :

- Agricultural lands increase due to the reclamation of new lands.
- Improving farm production and farming systems through diversification of farm and non-farm employment and infrastructure development.
- Land-resource planning information and education for agriculture.
- Land conservation and rehabilitation.
- Conservation and sustainable utilization of plant and animal genetic resources for food and sustainable agriculture (PAGRFA).
- Sustainable Agriculture production system.
- Sustainable livelihood Approach for elimination of rural poverty.
- Rural energy transition to enhance productivity.
- Agricultural policy review, planning and integrated programming in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development.
- Ensuring people's participation and promoting human resource development for sustainable agriculture.
- Land-resource planning, information and education on agriculture.
- Development and enhancement of the role of women in the Oldlands.
- Establishing integrated farming system using technologies for improving the use of renewable natural resources.

6.7 Conclusions

Agriculture has to meet this challenge, mainly by increasing production on land already in use and by avoiding further encroachment on land that is only marginally suitable for cultivation.

Major adjustments are needed in agricultural, environmental and macroeconomic policy, at national level to create the conditions for sustainable agriculture and rural development. The major objective of sustainable agriculture and rural development is to increase food production in a sustainable way and enhance food security. This will involve education initiatives, utilization of economic incentives and the development of appropriate and new technologies, thus ensuring stable supplies of nutritionally adequate food, access to those supplies by vulnerable groups, and production for markets; employment and income generation to alleviate poverty; and natural resource management and environmental protection. The priority must be on maintaining and improving the capacity of the higher potential agricultural lands to support an expanding population. However, conserving and rehabilitating the natural resources on lower potential lands in order to maintain sustainable man/land ratios is also necessary. The main tools of sustainable agriculture and rural development are policy and agrarian reform, participation, income diversification, land conservation and improved management of inputs. The success of sustainable agriculture and rural development will depend largely on the support and participation of rural people, national Governments, the private sector and international cooperation, including technical and scientific cooperation.

Agricultural Development argues that, to be successful, poverty-reduction policies must focus on rural areas. To overcome disadvantages stemming from remoteness, lack of education and health care, insecure and unproductive jobs, high fertility and (often) discrimination as women, the rural poor need: legally secure entitlements to assets (especially land and water); technology (above all for increasing the output and yield of food staples); access to markets; opportunities to participate in decentralized resource management; and access to microfinance. Such policies not only promote economic growth but also help alleviate urban poverty. A sustainable reduction in poverty calls for the creation of a pro-poor policy environment, and allocation of a greater volume of resources targeted to the poor with greater effectiveness. This needs to be complemented by better partnership among government, civil society and the private sector so that the poor are empowered to take responsibility for their own development.

6.8 SWOT analyses income support

During the workshop the discussion group on agriculture, food production and land use discussed their ideas on whether income support would be a feasible policy instrument to make the Old Lands dynamic rural areas. The results of the discussion were arranged in a SWOT analyses.

Good Agricultural Practices (or GAPs) as defined by the FAO are a collection of principles to apply for on-farm production and post-production processes, resulting in safe and healthy food and non-food agricultural products, while taking into account economical, social and environmental sustainability.

GAPs may be applied to a wide range of farming systems and at different scales. They are applied through sustainable agricultural methods, such as integrated pest management, integrated fertilizer management and conservation agriculture. They rely on four principles:

1. Economically and efficiently produce sufficient (food security), safe (food safety) and nutritious food (food quality);
2. Sustain and enhance natural resources;
3. Maintain viable farming enterprises and contribute to sustainable livelihoods;
4. Meet cultural and social demands of society.

GAPs applications are being developed to meet farmers and transformers needs and specific requirements and require maintaining a common database on integrated production techniques for each of the major agro-ecological area to collect, analyze and disseminate information of good practices in relevant geographical contexts.
Below is the working group outcome as reported during the reporting session of the workshop in the form of SWOT analysis:

Strengths	**Weaknesses**
• Support production of staple food Commodities; • Use for safe food production (quality); • Adapting systems that enhance production; • Limit factors leading to desertification; • Adopting sustainable agricultural production systems.	• Desertification; • Lack of trained HR; • Unbalance due to income support to a certain group; • Income support relies on unsustainable resources.
Opportunities	**Threats**
• Encourage the establishment of farmer and/or commodity associations and unions; • Land improvement; • Clustering fragmented land for better agricultural management.	• Lack of environmental and biodiversity awareness; • Unpredictable adverse effects when income support is discontinued.

Analyzing the SWOT analysis by examples of Good Agricultural Practices related to soils

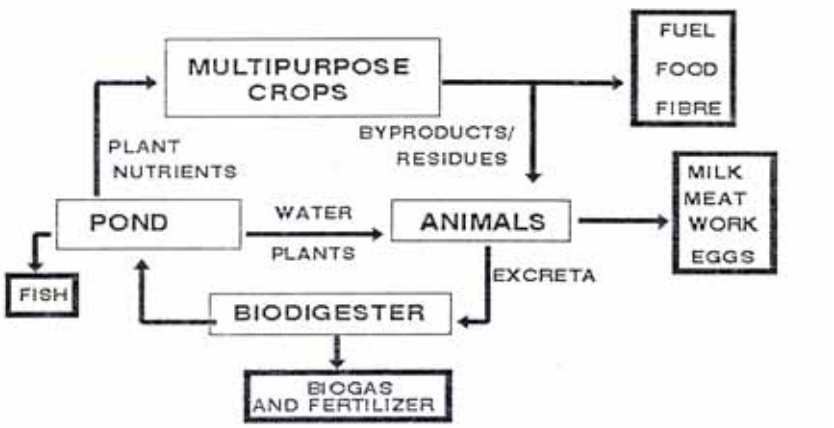
- Reducing erosion by wind and water through hedging and ditching.
- Application of fertilizers at appropriate moments and in adequate doses (i.e. when the plant needs the fertilizer), to avoid run-off (nitrogen balance method).
- Food staples, cereals like wheat, rice and maize and roots and tubers like yam are central in the rural poor food economy and struggle for survival. Food staples provide the bulk of the output and income of the rural poor; and are their main source of calorie intake. The urban poor also spend much of their incomes on purchasing food staples. However, these alternatives are generally complementary

to technical progress and are unlikely, without it, to generate an adequate rate of poverty reduction.

- Maintaining or restoring soil organic content, by manure application, use of grazing, crop rotation.
- Reduce soil compaction issues (by avoiding using heavy mechanical devices).
- Maintain soil structure, by limiting heavy tillage practices.
- A major impact of the desertification is biodiversity loss, and loss of productive capacity. A number of solutions have been tried in order to reduce the rate of desertification and regain lost land. Leguminous plants, which extract nitrogen from the air and fix it in the soil, can be planted to restore fertility. Stones stacked around the base of trees collect morning dew and help retain soil moisture. Artificial grooves can be dug in the ground to retain rainfall and trap wind-blown seeds...etc.
- The major objective of sustainable agriculture and rural development is to increase food production in a sustainable way and enhance food security. This will involve education initiatives, utilization of economic incentives and the development of appropriate and new technologies, thus ensuring stable supplies of nutritionally adequate food, access to those supplies by vulnerable groups, and production for markets; employment and income generation to alleviate poverty; and natural resource management and environmental protection. The priority must be on maintaining and improving the capacity of the higher potential agricultural lands to support an expanding population. However, conserving and rehabilitating the natural resources on lower potential lands in order to maintain sustainable man/land ratios is also necessary.

Analyzing the SWOT analysis by examples of good agricultural practices related to animal production, health and welfare

- Respect of animal well-being (freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury or disease; freedom to express normal behaviour; and freedom from fear and distress).
- Avoid negative impacts on landscape, environment and life: contamination of land for grazing, food, water and air.
- Check stocks and flows, maintain structure of systems.
- Prevent deleterious chemical and medical residues from entering the food chain.
- Avoid feeding animals with deleterious feeds.
- Sustainable use of natural renewable resources will be facilitated when the feed is grown, the animal are fed and the excreta is recycled on the farm in ways that minimize the use of imported inputs including energy. Integrated farming systems that embody these concepts should be focused on as a result of increasing human pressure on land resources. The simple version of this model is shown in the following model:



Sustainable agriculture requires close integration of crops, animals and energy in order to make optimum use of available biomass.

- Prefer safety measures standards in manipulation of equipment.
- Analysis and use of agricultural and rural data in support of rural poverty reduction and food security policies in old lands were one of the main challenges that should be put into considerations. Another challenge is to establish income support policy for good agricultural practices in the rural areas that allows to assist motivated people with entrepreneurial talent on income support to set up their own small business, to support poor farmers in developing their business by tools of the good agricultural practices and to implement for them on-farm and off-farm employment opportunities.

7 Policy reform, population and demography

By Dr. Mohamed Fetouh Aboulata

7.1 Introduction

The Old land of Egypt (Nile valley, Delta, and Fayoum) represents the main bulk of Egyptian agricultural land, based on which the entire population, whether living in rural or urban areas, are fed. Smallholdings of agricultural land are the prevalent pattern; the situation is even getting worse with the continuing population growth and the expansion of building construction on the old arable land. In such circumstances, it is of utmost importance to formulate and implement policies that would accelerate the pace of rural development in Egypt while maintaining development-conducive socio-cultural values, the characters of agricultural land, and biodiversity.

The purpose of this paper is to provide necessary demographic and agricultural policy reform information that might help in reaching a sound vision for Egypt's rural development. Based on such developmental vision, detailed policies, and intervention programs can be articulated.

The paper is organized in such a way that section 2 presents population trend and estimates for the year 2025; section 3 portrays geographical population distribution; section 4 outlines population age and sex structures; section 5 presents household size; section 6 depicts household accessibility to public utilities; section 7 highlights some salient socioeconomic population characteristics. In most cases, analysis is undertaken for rural population in comparison with the total population of Egypt. Moreover, when feasible, a contrast between current situation and what would be expected to happen by the year 2025 under different scenarios is elaborated. Section 8 is focused on contemporary agrarian policy reform implemented in the country. The last section, section 9, includes discussion and conclusion. References are given in section 10.

7.2 Population Trend

In the last eight centuries the population of Egypt has increased from 14.2 million in 1927 to about 72.6 million in 2006 (Table 7.1). This means that the population has doubled more than 5 times in this period. The corresponding figures for rural population are 10.0 and 41.6 in years 1927 and 2006 respectively. Cleary, the pace of rural population growth is slower than that of the entire population. This is attributed to massive rural-urban migration (urbanization) especially that occurred before the seventies of the last century. Had rural-urban migration been insubstantial one would have expected faster pace of growth of rural compared with total populations because of the greater rates of natural increase characterizing rural

communities. The percentage or rural population has almost been constant in the last 40 years. It fluctuates slightly around 57%.

Most population projection studies indicate that the population of Egypt would reach 95 million around 2025 under medium fertility projection scenario. Based on the assumption that the percentage of rural population would retain its present plateau at approximately 57%, rural population would exceed 54 million by 2025.

Table 7.1 Total and Rural Population in census years and Projected Population in 2025

Year	Total Population (000)	Rural Population (000)	Percent or rural Population
1927	14178	10368	73.1
1937	15921	11429	71.8
1947	18967	12604	66.5
1960	26085	16120	61.8
1966	30076	17692	58.8
1976	36626	20590	56.2
1986	48254	27038	56.0
1996	59313	34027	57.0
2006	72579	41629	57.3
2025	95000	54435	57.3

Source: CAPMAS, Statistical Year Book, 2005; the preliminary results of 2006 Census; and the population projection prepared by The Population Council, NAWA Region.

7.3 Geographical Distribution

Administratively, Egypt is divided into 27 governorates, which are generally collapsed into four distinct regions (Urban governorates, Lower Egypt, Upper Egypt, Frontier governorates). The latter grouping of governorates is very useful in presenting census and survey results as substantial differentials in a wide range of socio-economic and demographic indicators exist across regions. The first region includes four governorates, which are entirely urban; they are Cairo, Alexandria, Port Said, and Suez. The other three regions encompass governorates having both urban and rural components. Urban and Lower Egypt regions have nine governorates each, whereas Frontier governorates region includes only five.

The 2006 Census (Table 7.2) reveals that more than half of rural population (54.6%) lives in Lower Egypt (Delta) while the share of Upper Egypt is 44.4%. Frontier governorates region includes no more that 1% of Egypt's rural population. Rural population is not distributed evenly among governorates of each region since governorates vary in area and/or number of population agglomerations (cities, towns, villages). In Lower Egypt, only three governorates include approximately 27.7% of the country's rural population. These governorates are Sharkia (9.9%), Behera (9.2%) and Dakahlia (8.6%). The same three governorates altogether have no more than 20.8% of the country's total population, indicating heavier weight of rural compared with urban population in those governorates. On the other extreme, there exist two governorates in Lower Egypt which are as small as having only 1.6% (Damietta), and 1.2% (Ismailia) of total rural population of Egypt. The rural

population share of the remaining Lower Egypt governorates is almost uniform as it ranges from 4.8% to 6.8%.

Table 7.2 Geographic Percentage Distribution of Total and Rural Populations of Egypt, 1996 and 2006

Governorate	Total Population (%)		Rural Population (%)	
	1996	2006	1996	2006
Urban Governorates	18.6	17.9	--	--
Cairo	11.5	10.7	--	--
Alexandria	5.6	5.7	--	--
Port Said	0.8	0.8	--	--
Suez	0.7	0.7	--	--
Lower Egypt	43.5	43.0	55.0	54.6
Damietta	1.5	1.5	1.9	1.6
Dakahlia	7.1	6.9	9.0	8.6
Sharkia	7.2	7.4	9.7	9.9
Kalyoubia	5.6	5.8	5.8	6.3
Kafr El Sheikh	3.7	3.6	5.0	4.8
Gharbia	5.7	5.5	6.9	6.8
Menofia	4.7	4.5	6.5	6.2
Behera	6.7	6.5	9.1	9.2
Ismailia	1.2	1.3	1.0	1.2
Upper Egypt	36.5	37.3	44.0	44.4
Giza	8.1	8.6	6.4	6.2
Beni Suef	3.1	3.2	4.2	4.2
Fayoum	3.4	3.5	4.5	4.7
Menia	5.6	5.8	7.8	8.2
Asuit	4.7	4.7	6.0	6.1
Suhag	5.3	5.2	7.2	7.1
Qena	4.1	4.1	5.7	5.7
Aswan	1.6	1.6	1.6	1.6
Luxor	0.6	0.6	0.6	0.6
Frontier Governorates	1.4	1.8	1.0	0.9
Red Sea	0.3	0.4	0.1	…
El Wadi El Gidi	0.2	0.3	0.2	0.2
Matrouh	0.4	0.4	0.3	0.2
North Sainai	0.4	0.5	0.3	0.3
South Sainai	0.1	0.2	0.1	0.2
Total %	100.0	100.0	100.0	100.0
No.	59,312,914	72,579,030	34,026,579	41,629,341

The disparity among Upper Egypt governorates with regard to governorate's share of total rural population is relatively limited. With the exception of Aswan and Luxor the percentage of rural population residing in the remaining Upper Egypt governorates ranges from 4.2% for Beni Suef to 8.2% for Menia. Aswan and Luxor have only 1.6% and 0.6% of the country's rural population respectively.

Frontier governorates region contains only about 1% of the country's rural population. With the exception of Red Sea, variability among various governorates of this region regarding the share of each in the country's rural population is very limited.

The comparison of the 1996 and 2006 percentage distributions is another way to assess whether the speed of population growth of a certain governorate (or its rural component) is equivalent to, above, or below the average speed of growth of the national (rural) population. It means if the percent of population in a certain governorate is constant in both censuses the rate of population growth of this governorate will be identical to the rate of population growth of the national population. Therefore, higher (lower) percentage in 2006 is a reflection of higher (lower) rate of population growth compared with the growth rate of the national population during 1996-2006 period. Clearly, rural Upper Egypt has grown in a faster rate compared with rural Lower Egypt.

7.4 Population Age and Sex Structures

Table 7.3 presents the percentage distribution of total and rural populations by age according to sex. Broad age groups corresponding to childhood ages (0-14); working ages (15-64); and elderly ages (65+) have been used. The greater percentage of population in the younger age group is an indicative of a young age structure characterized by higher age-dependency ratio. According to 1996 census, the percentage of population in the first age group (0-14) reached 37.7 for total population with a little difference due to sex, the corresponding percentage for rural population is 40.8. This means that the age structure of rural population is younger than the national age structure of urban and rural populations combined. Higher fertility in rural compared with urban areas are responsible for younger rural age structure. Consequently, the percentage of population in working ages (15-64) is higher for total population (58.9) compared with rural population (55.8). The prevalence of elderly persons in rural population is almost the same as the national average (3.4).

An immediate implication of younger age structure is the increase of age-dependency ratio, defined as the number of persons in non-working ages (0-14, and 65+) per 100 persons in working ages (15-64). The dependency ratio of rural population is 79.2 % compared with 69.8% for the national average. Evidently, the dependency burden is higher in rural areas leading to weaker saving and investment capabilities.

In the course of time and with continuing decline in fertility the age structure will be growing older. Thus, a percentage of population in childhood ages lower than 30 is anticipated to take place in Egypt in the twenties of this century, qualifying Egypt to enter Demographic Window era. The UN Population Department has defined the Demographic Window as the period when the proportion of children and youth under 15 years falls below 30 per cent and the proportion of people 65 years and older is still below 15 per cent. Societies which have entered the demographic window have smaller dependency ratio and, therefore, the demographic potential for high economic growth as favourable dependency ratios tends to boost savings and investments in human capital. But, this so called "demographic bonus" (or demographic dividend) remains only a potential advantage as low participation rates

(for instance among women) or rampant unemployment may limit the impact of favourable age structures.

With regard to sex composition of rural population contrasted with total population, Table 3 shows that the sex ratio (defined as number of males per 100 females) irrespective of age is about the same for rural population (104.6) as for the total population (104.1). The sex ratio classified by age is similar in rural and national populations only for the first (107.3 for rural and 106.6 for total) and the second age groups (102.7 for rural and 102.1 for total). The third age group, however, shows a substantially higher sex ratio for total population (112.5) compared with rural population (103.3).

Table 7.3 Percentage Distribution of Total and Rural Populations by age and by sex ; and Sex Ratio by age,1996

Age group	Total Population				Rural Population			
	M	F	T	Sex Ratio	M	F	T	Sex Ratio
0-14	38.0	37.1	37.7	106.6	41.3	40.2	40.8	107.3
15-64	58.5	59.6	58.9	102.1	55.4	56.4	55.8	102.7
65+	3.5	3.3	3.4	112.5	3.3	3.4	3.4	103.3
Total %	100.0	100.0	100.0	104.1	100.0	100.0	100.0	104.6
NO. in Million	30.35	28.96	59.31	-----	17.39	16.63	34.02	-----

Source: the 1996 Population Census

7.5 Household Size

Evidently, the prevalence of bigger households (extended and composite households) diminishes over time. The preliminary results of 2006 census indicate that the average household size for the entire country is 4.18 persons descending from 4.65 persons in 1996. On the other side, the household size in rural areas is slightly higher (4.37) in 2006 than the national average. In 1996, the rural household size averaged 4.95 persons (Table 7.4).

Table 7.4 Average Household Size in rural and total Egypt in 1996 and 2006

Total Egypt		Rural Areas	
1996	2006	1996	2006
4.65	4.18	4.95	4.37

Source: The preliminary results, 2006 census

7.6 Connection to Public Utilities

With the aim of improving environmental and health conditions of Egypt's population, especially those of rural areas, the government has been taking serious measures to get all housing units connected with piped water, electricity and sewerage networks. Tangible achievements have taken place during the period 1996-2006 (Table 7.5).

Piped water accessibility of rural households has increased from 70.7% in 1996 to 92.9% in 2006. With this 22 percentage points increase of piped water accessibility in rural areas, compared with only 13 percentage points increase at the national level, one can easily deduce that more attention has been given to rural communities so as to bridge urban-rural gap of water accessibility.
Presently, electricity is available in almost all dwellings either in urban or rural areas. Nonetheless, connection to sewerage networks is lagging far behind as only 24.3% of rural households are connected to sewerage. In this aspect, the urban-rural gap is exceptionally notable.

With the continuation of present pace of improvement in public utility connection, it is anticipated that accessibility to piped water and electricity will be universal by 2025, whereas intensive efforts and investments are required to build new sewerage networks in deprived communities so as to greatly expand its coverage.

Table 7.5 Percentage of Households Connected to Public Utilities In Rural and Total Egypt, in 1996 and 2006

Public Utility	Total Egypt		Rural Areas	
	1996	2006	1996	2006
Piped water	82.6	95.5	70.7	92.9
Electricity	95.1	99.2	92.2	99.0
Sewerage	45.1	50.6	17.9	24.3

7.7 Socio-Economic Characteristics

In this section an attempt is made to portray the major socio-economic characteristics of rural compared with total population. Selected analysis dimensions are Education and Illiteracy, Employment, Poverty and Health.

7.7.1 Educational Status

In the present time, illiteracy hits about 30% of total population aged 10 years and above (Table 7.6). The incidence of illiteracy in rural communities (36.6%) is somewhat above the national average. A remarkable improvement in literacy is indicated by the preliminary results of the 2006 census as illiteracy prevalence in rural communities has dropped from 49.6% to 36.6% in the 1996-2006 inter-censal period. The comparable drop for total population is from 39.4% to 29.3%.

On the other side, the prevalence of persons with secondary and higher educational qualification has witnessed significant increase during the 1996-2006 period, it has escalated from 16.4% to 29.3% for rural population, whereas the prevalence at national level has risen from 24.2% to 37.7%.

Undoubtedly, wide spread of education is inevitable for any nation aiming at accelerating the pace of human development. Time will come soon when we see that the traditional Egyptian illiterate farmer will no longer be the common model. In the present time, the image of a different farmer has emerged. Descendants of traditional

illiterate farmers have entered school and become educationally qualified, even though they are still attached to the agricultural land that they might have inherited (small holding). Some of them practice farming in addition to any other job they may have. This is the kind of socio-cultural value that we need to strengthen and support in any endeavor targeted to the development of rural population. Formal education of villagers must not be taken as pretext to quit farming and abandoned possessions of agricultural land. Small agricultural and agricultural-related projects can greatly help alleviating unemployment among newly graduated persons in rural communities.

Table 7.6 Percentage distribution of Population (10 years+) by Educational Status in Rural and Total Egypt in 1996 and 2006

Educational status	Total Population		Rural Population	
	1996	2006	1996	2006
Illiterate	39.4	29.3	49.6	36.6
Read &write	18.7	13.6	17.9	15.0
Below secondary	17.7	19.4	16.1	19.0
Secondary + Above secondary	18.5	28.1	14.1	24.6
University +	5.7	9.6	2.3	4.7
Total	100.0	100.0	100.0	100.0

7.7.2 Employment

Censuses and labour force surveys collect data about industry of all working persons. Industry refers to the type of economic activity of the establishment to which the working person belongs. With regard to out-of-establishment workers, mainly those engaged in agricultural activities, industry is inferred from occupation, so whenever the out-of-establishment worker has an agriculture-related occupation his/her industry is recorded as agriculture. The preliminary results of the 2006 census point out that the working population (15 years+) amount to 19.9 million, of which 11.0 million live in rural communities. Unfortunately, industry classification of working population is generated only with the final census results due to the lengthy coding operation implied. Hence, the best source available for industry data is the 1996 census, especially when only information about industry structure is needed. According to 1996 Census 31% of total working population belong to agriculture. As a matter of fact, agricultural-related occupations are not considerably dominant in rural communities as only about half (51.1%) of working rural population is engaged in agriculture.

Table 7.7 Total Working Population (15+years), and Population Working in Agriculture (15+ years) by Urban/Rural Residence, 1996

	Urban	Rural	Total
Total Working Population	7313237	8454978	15768215
Population Working in NO. Agriculture	558136	4322735	4880871
%	7.6	51.1	31.0

Source: The 1996 Census

7.7.3 Poverty

Poverty reduction has been considered as one of the key objectives of the long-term developmental plan of Egypt. It is targeted in the plan that poverty to be reduced to 6% by year 2022. Several policies have been formulated and implemented to help vulnerable and low-income population groups. Although there is no a single government entity responsible for planning, monitoring and coordinating the different programs and activities addressing the poor, Egypt has perused multi-dimensional strategies aiming at raising the standard of living of the people (Ellaithy, H., 2006).
The first MDG is concerned with eradication of extreme poverty as defined by the proportion of people with income below one Dollar a day – evaluated by Purchasing Power Parity (PPP). In fact, it turns out that, with this criterion, there is no poverty in Egypt, as less that 1% of the population is considered poor.

On the basis of food poverty line approach combined with the estimate of non-food poverty line, it has been estimated that overall poverty in Egypt stood at 19.26% in 2004-05 using the national poverty line approach {Table 7.8 (a)}. This means that almost 19.26 % of the population in Egypt, or approximately 14 million, could not obtain their basic food and non-food needs (Ellaithy, 2006). In the same time, less than one percent of Egyptians spent less than $1 a day evaluated at PPP, whereas, 24.84% live on less than $2 a day {Table 7.8(b)}.

Evidently, poverty in Rural Upper Egypt (38.29% in 2004/05) is well above the national average whereas poverty in Rural Lower Egypt is rather better than the national average (15.91% in 2004-05). It is anticipated that Egypt could realize the MDG since poverty is projected to reach 10.8% by 2015, i.e., more than 50% reduction of the 1990 poverty level.

Table 7.8(a) Trend of Poverty

a-Lower Poverty Line Criterion

Year	Rural Lower Egypt	Rural Upper Egypt	Total Egypt
1990/91	27.14	43.46	24.32
1995/96	21.53	29.32	19.41
1999/00	11.83	34.15	16.74
2004/05	15.91	38.29	19.26
2015(projected)	5.22	20.41	10.80

Source: Derived from Household Income &Expenditure Surveys by Ellaithy,H. 2006

Table 7.8(b) Trend of poverty

b- Two Dollar a day Criterion

Year	Rural Lower Egypt	Rural Upper Egypt	Total Egypt
1990/91	46.71	64.47	39.45
1995/96	44.58	67.19	41.52
1999/00	21.98	49.46	24.84
2004/05	17.91	43.90	21.93
2015(projected)	11.23	32.29	16.49

Source, El Laithy, H. 2006

7.7.4 Public Health

Several indicators are used to assess health condition of a population, the most important of which are Expectancy of Life at Birth, Infant Mortality Rate (IMR), and Under-Five Mortality Rate. IMR in particular is very sensitive to detect improvements, even if minor, in health and environmental conditions of the population.

Infant Mortality Rate can be measured based on vital registration data or retrospective surveys. The latter approach is preferable as it overcomes the problem of under-registration of births that died immediately after birth has taken place. It is most likely, especially in rural areas, that infants who died in a short period after birth would escape both birth and death registration. The series of Demographic and Health Surveys (DHS) conducted in Egypt, and elsewhere, has constantly given due consideration to measuring IMR and Under-Five Mortality.

The latest DHS of 2005 has shown that the level of infant mortality in the ten-year period preceding the survey (1996-2005) is estimated at 40.5 per thousand live births for the whole Egypt compared with 45.2 for rural communities (Table 7.9). Moreover, Under-five mortality in the same period amounted to 50.0 and 56.1 per thousand live births for the whole country and rural communities respectively. Noteworthy, infant and child mortality have shown continuous and substantial improvement over time, the same survey has estimated IMR and Under-five mortality for the whole country in the five-year period preceding the survey as of 33 and 41 for the two indicators respectively. Comparable figures were 63 and 81 in the period 1991-1995; and 108 and 157 in the period 1978-1982.

Table 7.9 Infant and Under-5 mortality rates (1996-2005)

Mortality Rate	Total Population	Rural Population
Infant Mortality Rate (IMR)	40.5	45.2
Under-5 Mortality Rate	50.0	56.1

Source: EDHS, 2005

7.7.5 Reproductive Health

The fairly newly developed concept of reproductive health implies maternal health with its three elements (antenatal care, care at delivery, and postpartum care); treatment of infertility; prevention and treatment of sexually transmitted diseases; and making available family planning services with a wide range of different choices. Quality and sufficient reproductive health services are inevitable if maternal mortality and morbidity is to be curtailed. Women, especially in rural and unprivileged communities, have an essential human right to lead a healthy and decent reproductive life. That is the reason why the international community has endorsed the MDG goal number 5 concerning the reduction of Maternal Mortality Ratio to reach in 2015 its one -quarter value of the year 1990.

Table 7.10 exhibits the trend in various elements of reproductive health, viz, antenatal care whether any or regular; tetanus toxiod injection; medically assessed deliveries; and caesarean deliveries in rural communities compared with the national average. Though significant improvements have taken place in the prevalence level of all these sides of reproductive health, the recent prevalence levels are still modest especially in rural communities. Less than half of total births in rural communities (49.2%) whose mothers seek regular antenatal care compared with 58.5% for the national average. Medically assisted deliveries are to some extent more prevalent in both rural communities (65.8%) and the entire nation (74.2%).

Table 7.10 Trends in Maternal Health Indicators for Total (T) and Rural (R) Populations

Year	Any Antinatal Care		Regular Antinata Care		Tetanus toxoid Injection		Medically-assisted Deliveries		Caesarean Deliveries	
	T	R	T	R	T	R	T	R	T	R
1988	Na	Na	Na	Na	11.4	10.6	34.6	19.1	Na	Na
1992	Na	Na	Na	Na	57.8	57.5	40.7	27.5	Na	Na
1995	39.1	27.2	28.3	14.9	69.5	71.2	46.3	32.8	6.6	4.2
2000	52.9	41.9	36.7	25.9	72.4	73.9	60.9	48.0	10.3	6.3
2005	69.6	62.1	58.5	49.2	78.5	83.2	74.2	65.8	19.9	14.6

Source: DHS, 2005

The use of family planning methods is necessary for women to regulate their fertility performance. It has been empirically proven that women health is endangered with too early pregnancy, shorter birth interval, and too late pregnancy. That is the reason why the population policy of Egypt calls for prolonging birth interval to three years at least and enforcing the legislation of minimum age at marriage (16 years for females and 18 years for males). The Population Policy stresses that though families have freedom to reproduce as many children as they desire, they have also the rights to learn that too early, too speedy, and too late pregnancies augment health hazards of women and children as well. This is the message advocated for in the population Information, Education, and Communication programs applied in Egypt.

No doubt that contraceptive use has increased dramatically in the last two decades or so. In rural communities the percentage of currently married women in reproductive age (15-49) using any contraception method has soared from 24.5% in 1988 to 56% in 2005. At present, rural CPR is lower than national CPR by only 3 percentage points (Table 7.11).
Consequently, Total Fertility Rate, defined as the average number if live births a woman will have had during her life if she passes through the age fertility levels of the year under consideration, has decreased in rural communities by two children in the period 1988-2005. Presently, rural TFR (3.4) is slightly above the National TFR (3.1).

Table 7.11 Trend in Contraceptive Prevalence Rate (CPR) and Total Fertility Rate (TFR)

Year	CPR		TFR	
	Total Pop.	Rural pop.	Total Pop.	Rural pop.
1988	37.8	24.5	4.4	5.4
1991	Na	Na	4.1	5.6
1992	47.1	38.4	3.9	4.9
1995	47.9	40.5	3.6	4.2
1997	54.5	47.1	3.3	3.7
1998	51.8	45.6	3.4	3.9
2000	56.1	52.0	3.5	3.9
2003	60.0	55.9	3.2	3.6
2005	59.2	56.0	3.1	3.4

7.8 Policy Reform

History acknowledges Egypt as an agricultural country. Its wealth is derived from agriculture. The farmers (fellahin) carry out the important task of tilling the soil, feeding the population and supporting the economy.

At the beginning of the twenties century, an unprecedented increase in population began, and an escalating demand for food ensued. Now, the major obstacles facing Egyptian agriculture are the limited arable land (about 7.5 million feddans) and water supply (the River Nile and less than 100 mm rainfall in the northern coastal region). This drives governmental policy reform and effective research programs towards high production, which requires increasing crop intensification, greater input efficiency, reduced negative environmental effects, a greater knowledge base and an efficient management of precious resources.

With the beginning of the nineties of past century Egypt has commenced adopting liberalization policies for the sake of transforming the economic system from a state-controlled to a free-market one. Several agrarian reform policies were integrated in this economic policy reform package. In the same time, a series of population policies has been adopted since the eighties of the past century for the sake of alleviation the population problem in Egypt. The geographical population redistribution has been an essential element of all population policy versions so as to lessen the population pressure on the old land.

In this section, a review of the most salient aspects of the agrarian reform policies is presented, followed by an exposition of the main features of the current population policy of Egypt.

7.8.1 Agrarian Reform Policy

The essential aspects of agrarian reform policies are outlined in the following:

Tenant- landowner relationship
The socialism system of Gamal Abdel Nasser era has given tenants, and their children after them, the right of cultivating the land they rented from the owner against very modest rental value, which was greatly below the economic value of the land output. A landowner was prohibited to restore his land from the original tenant to rent it to another person or even to farm it directly by the owner himself. This situation created significant discrimination in land prices: the unit (Faddan) price of rented land was about half of the price of non-rented land as the new purchaser had no power to replace the original tenant by another one. This unjust relationship has been rectified by a legislation promulgated in 1992 (law No. 96 in 1992) to regulate the relationship between owners and tenants. Based on this legislation the owner-tenant relationships are only governed by market forces.

Free pricing policy
An essential aspect of a free economy is to let market forces determine prices. This is what is happening in Egypt in the present time. The prices of almost all agricultural products are subject to supply and demand factors. Nonetheless, sugarcane price is still controlled by the government, as the key purchasers of the products are the sugar factories, which are still a part of the public sector. In most cases, private and public sectors determine jointly cotton prices. Concerning wheat, the government sets a baseline price for it soon after harvesting, however the influence of supply and demand factors is much greater as prices may deviate significantly (up or down) from the baseline price. The prices of all horticultural crops are solely determined by market forces.

Discontinued subsidizing policy
In addition, and in conformity with the socialistic policy, the government used to subsidize various agricultural requisites such as seeds, fertilizers, and pesticides. Naturally, with liberalization policies subsidy looses its justifying roots, as market forces, supply and demand, are what determine prices for most crops. Irrigation water, however, is provided to the old land of Egypt free of charge. In other words, irrigation water is fully subsidized in the old land.

Eliminating crop quota structure
This has been accompanied with the cancellation of crop delivery system and governmental control of crop rotation to pave the road towards privatization of domestic and export markets for products including rice and cotton.

Up-grading land quality
The level of soil water adversely affects the quality of old land. For this reason drainage is of utmost importance to protect the old land from over salting. In recent years, measures have been taken to construct or renovate networks of covered drainage system. Landowners pay the cost of such projects on a credit basis.

Agricultural guidance, mechanization, and credit system

The agricultural guidance of the Ministry of Agriculture and Land Reclamation plays a pivotal role towards increasing land productivity. The Agricultural Research Centres in collaboration with the Agricultural Guidance Authorities have been behind the already achieved remarkable increase in the yields of most crops including wheat, rice and other horticultural crops. A policy to support and strengthen the activities of indicated organizations is presently in place.

Though labour-intensive is the dominant mode of production, the introduction of some kind of mechanization is inevitable, especially tractors and harvesting machines. Such machinery is, in most cases, provided to small farmers by agricultural cooperatives. A policy of this nature must be continued. In addition, the Agricultural Credit Bank and the Social Fund for Development provides farmers with relatively low-interest loans to set up or expand small-scale projects. Continuation and expansion of such credit granting policies is important means to cope with unemployment in Egypt's rural communities.

Prohibiting building construction on the old land

Serious legal and administrative measures have been taken to protect the old fertile land from depletion due to the expansion of building construction in rural areas. Several laws, ministerial decrees and orders are issued to preserve the old land from being exploited for any purposes other than agriculture. Breaches are confronted by severe actions including demolition of the building. Nonetheless, complete compliance with this policy is sometimes violated, especially before any parliament election.

7.8.2 Egypt's Population Policy

The presently adopted Population Policy in Egypt has four objectives:

Slowing down the population growth rate.

1. Balanced geographical population distribution.
2. Improved socio-economic characteristics of the population.
3. Lessened demographic, social, and economic gaps among various population groups and various regions.

Several strategies have been stipulated in the population policy so as above-mentioned objectives could be realized. The most important of which are:

- Improving the quality of reproductive health and family planning services. The availability and accessibility of such services are to be guaranteed especially in rural and remote areas.
- Provoking behavioural and social changes towards small family norms.
- Strengthening the integration of demographic and population issues within the frameworks of comprehensive developmental plans and policies.
- Combating illiteracy, especially among females.
- Due attention is to be given to the issue of woman empowerment and gender equity and equality.

- Encouraging and supporting the partnership among various stakeholders, viz, governmental organizations, NGO's, civil society institutions, and private sector to jointly cope with various elements of Egypt's population problem.
- Lessening the population density in Delta and Nile Valley regions by rehabilitating the long-neglected Egyptian desert. Population mobility from the old land to a reclaimed desert land and/or to new manufacturing projects constructed in the desert are to be encouraged. In the same time, incentives are to be granted to investors starting new projects in the desert.
- Preventing the spread of urban slum areas, and providing existing ones with necessary services such as piped water, electricity, sanitary infrastructure, schools, and public clinics.

7.9 Discussion and Conclusions

The purpose of this paper is to portray the demographic and socio-economic sides of Egypt's rural population and to outline the contemporary agrarian policy reforms took place in the country. The main features of the national population policy have also been stated.

In the endeavour to arriving at a sound and policy-oriented vision for formulating an effective ''Policy towards Dynamic Rural Areas in Egypt'', it seems useful to give considerations to the following issues.

- A thorough assessment of on-going income-support measures are to be undertaken. Lessons learned are very useful so as to draw on successful experiments when formulating the proposed policy.
- What are the elements of socio-cultural values that should be maintained along with the development process?. In fact, with development, the system of socio-cultural value is subject to gradual modifications and adjustments. For this reason, I believe that the identification of the range of values which are conducive to, or do not preclude, rural development is very important.
- Solving the problems of old land is contingent upon the expansion of desert land reclamation, which in most cases is hindered by scarcity of surface or underground waters. Therefore, The current irrigation practices in the old land are to be dramatically changed, even if an alteration of the crop structure becomes necessary. That is the only means to save sufficient quantities of Nile water to be directed to the desert.
- The social perception of farming profession has to be rectified. A Lower status of farmers is perceived by most people, even if farmers are university graduates. In this respect, socio-cultural changes are needed to orient the society towards more acceptance of the farming profession.
- Marketing is one of the major obstacles confronting small farmers, especially, those grow horticultural crops. Wholesalers are most beneficiaries, unfortunately, at the expense of producers. As such, it seems necessary to device some marketing mechanisms, say through cooperatives, aiming at creating a just remuneration system for all producers, wholesalers, and retailers.

- Continuing land fragmentation is inevitable, and the presently small landholdings in the old land of Egypt will be even getting smaller as time elapsed. This situation may discourage small landowners to continue practice farming and look for any other activities. A solution is urgently needed to confront this problem. For example, some kind of cooperatives may be established to let small landholders get the benefits of large- or medium-scale economy.
- The role of the governmental research institutions and the agricultural guidance of Ministry of Agriculture and Land Reclamation cannot be overlooked. Both have achieved significant successes in the past and must continue providing farmers with improvised seeds and instructions to increase land productivity.

7.10 SWOT analyses income support

During the workshop the discussion group on policy reform, population and demography discussed their ideas on whether income support would be a feasible policy instrument to make the Old Lands dynamic rural areas. The results of the discussion were arranged in a SWOT analyses.

Strengths	**Weaknesses**
• Current lending and financing programs raise the yield productivity of small farmers • Minimizing urbanization and encouraging the youth to stick to the agricultural sector • Improvement of social setting (education, health, etc) • Release of social stresses that push families towards child labor	• Dependence on foreign funds • Limited capacity of small farmers • Limited infrastructure • Limited marketing set-up • Male-dominated society in rural areas limit female participation
Opportunities	**Threats**
• Extensive outreach of existing agricultural cooperatives and PBDAC to grass root level • Presence of farmers' organizations at different levels as a base for handling income support programs • Egyptian farmers' agricultural values • facilitate family- based income generation	• Large Farmers more capable to satisfy eligibility criteria • Fund sustainability • Powerful farmers dominate the resources of income support • eligibility criterion for farmers included in the database is not realistic (owners are not necessarily the farmers) • Challenge to include landless farmers to income support programs within the eligibility criterion

7.10.1 Strengths

1. Available lending and financing programs through either the Bank of Agricultural Credit or the Social Fund for Development, results in raising farmer's income through establishment of small projects or expanding existing ones. This in turn is reflected in increasing the capacity of small land holders to enhance unit productivity. As such, income support policy will lead to the same favorable effects.

2. Income support programs may lead to curbing urbanization momentum as rural young youths would be encouraged to prefer living in villages to migration to other urban centers. In such situation youth would be more attached to the agricultural sector and small land holdings that they may have inherited from their parents.

3. Income support programs will undoubtedly improve the standard of living of small land holders, which would be reflected in better social settings (educational status, health condition…etc).

4. Previous studies show that the main cause of child labor is poverty. For this reason, it is expected that income support programs would help release social and economic stresses that push families towards child labor.

7.10.2 Weaknesses

1. The proposed income support program will be funded through external aids; therefore, it runs the risk of dependence on foreign funds whose continuity is not guaranteed.

2. Small farmers especially landless have limited capacity to be eligible for income-support. If eligibility criteria imply compliance of land holders to specific agricultural practices, landless farmers (agricultural wage workers) will be entirely excluded from income support programs.

3. The ultimate goal of income support programs is to help small land holders pursue income generating activities and/or achieve best utilization of small land holdings they may have. Limited infrastructures in rural areas may not be conducive to an economic expansion for small farmers.

4. Present experience indicates that local marketing pose great hindrance on small projects of young youths especially those related to agricultural production. Wholesalers exploit small producers of agricultural products through setting unfair prices away from real market forces (supply and demand). The gap between producer and retail prices for most products is quite large.

5. Most likely female-headed households will not be benefited from the income support program as land holding is male dominated. The prevalence of female land holders is very limited, therefore if income support is exclusively directed to land holders an important segment of households (female-headed) will not have direct benefits from such programs in spite of their impoverished conditions.

7.10.3 Opportunities

1. The chain of agricultural cooperatives is so wide that it may cover all Egyptian villages and small towns. Adequate administrative information on the exact area of all land holdings along with the names of holders is available on the official records of the agricultural cooperatives. Therefore, such information may constitute appropriate data base for identifying potential beneficiaries of the income support programs.

2. In addition to agricultural cooperatives, there exist other farmer's developmental organizations that might play an active role in handling the management of income support programs.

3. The social value attached to the agricultural land is very high regardless of how small the holding is. Ownership and/or tenure of agricultural land is a source of social prestige apart from its economic importance. The prevalence of such social values jointly with the proposed income support programs may greatly help small farmers be more stimulated to retain their land ownership/tenure and enhance productivity.

4. Income support policy will ultimately lead to enhancing the capacity of unprivileged rural families to start income generation activities in the agricultural or agricultural- related fields. The goal of dynamic rural communities would then be met.

7.10.4 Threats

1. In rural communities, large or even average, rather than marginal, farmers are having the economic capability and technical skills that enable them to satisfy eligibility criteria, no matter what these criteria are, of income support programs.

2. Sustainability of foreign funds is generally subject to political factors. Thus the inflow of foreign aids in years to come depends, to a large extent, on the political relationship of Egypt with other donating countries.

3. Powerful and influential farmers might dominate the resources of income support and leave little to marginal farmers to whom the income support policy is initially targeted.

4. The administrative information on agricultural land holdings available at agricultural cooperatives might not represent the reality with regard to who is really holding the land and exercise farming activities. In many cases the official land holder records of the agricultural cooperative. As a result, the data base of agricultural cooperatives may fail to identify real marginal farmers.

5. If holding an agricultural land is the exclusive criterion of participating in the income support program, a challenge remains on how lessee of agricultural land, who are not usually the official land holders, be benefited from income support programs.

7.10.5 Recommendations

The Policy Reform and Demography Team has made the following recommendations:

1. Neutral and external evaluation of compliance with eligibility criteria should be put in place.
2. Capacity building of small farmers is essential.
3. It is of high importance to professionalize the agricultural sector with modern techniques.
4. Income support programs should target households rather than individuals to guarantee woman participation.
5. Gender-specific activities must be considered.
6. Non-agricultural activities practiced in rural areas should be seriously considered in the income support program.

8 Water Management, biodiversity and Environment

By Dr. Mohsen Al Arabawy

8.1 Background

Agriculture is the most labour-intensive economic sector in Egypt. Agricultural production is affected by several physical, technological, traditional, cultural, technical and socio-economic limitations. The area of the irrigated agricultural lands in Egypt is approximately 8.8 million feddans; the old lands represent about 85%.

Irrigated agriculture represents the bulk of the demand for water in Egypt. Under water scarcity, it is the first sector affected. Water shortages lead to reduced food production. More efficient use of the finite water resources is aimed at in order to maximize the economic and social return per unit water used. Equity and sustainability are also high on the national agenda. Large scale schemes and projects are more effective in agricultural development. A multi-disciplinary action (crops, irrigation methods, economic systems) is needed at all levels (national and international). Socio-economic development is strongly depending on water.

Before 1990's, the old lands have been heavily subsidized (seeds, fertilizers, irrigation, and marketing). However, due to the economic reform and the free market trend adopted in the last two decades, only marginal subsidies remain.

Keeping the old lands under production is not only for economic reason (national economy, GDP, food security, trade and commerce) but also for demographic, social, cultural and environmental concerns. Sustainable productivity requires preservation of the general characters of the old lands (socio-cultural infrastructure, traditional values, bio-diversity and ethics). Because of the importance of profitability and attraction for maintaining the old lands agricultural activities (perhaps with different scope or various modalities), the notion of introducing "Income Support" for the conventional farming communities (Nile Valley, Delta, Fayoum) is considered as a viable option for sustainable agricultural activities, improved performance, modernization, increased yield, maximum output, integration, and further rural development.

Income Support to the Egyptian small holders in the dominant agricultural old lands is being explored within the context of options and possibilities of a dynamic rural areas policy for Egypt. This will be addressed in view of the natural competitive advantages, employment, rural living standards, land degradation, efficient farming, costs, nutrition, and economic stability.

This position paper covers the main three topics:
- Concept note, outline the nature of the issue and the idea of the study
- Thematic groups findings and recommendations, including SWOT analysis
- Brief sketch of the development of income support measures

The management of the irrigated agriculture in the Nile Valley and Delta has gone through several stages of improvements, adaptations and transformations. The challenges facing this sector necessitate original approaches and practices for better management within a roadmap for integrating new concepts and methods.

8.2 Introduction

Water is life. Water is also a limited resource that mankind should cherish. Water management aims to develop and protect the resource. In Egypt, being an arid country with hardly any rainfall, water management is of particular importance. Without a proper management, water will become a constraining factor in the socio-economic development of the country. To this end it is essential to develop and manage water resources in the interests of all stakeholders. Water policies are dynamic in nature to allow for changing conditions. The underlying assumption of Integrated Water Resources Management approach is to innovatively guide both public and private actions for ensuring optimum development and management of water that benefits both individuals and the society at large.

The present population of Egypt is strongly concentrated in the Nile Valley and the Delta (old lands); approximately 97% of the population lives on 4% of the land of the country. To relieve the pressure on the Nile Valley and Delta, Egypt has embarked on an ambitious programme to increase the inhabited area in Egypt by means of horizontal expansion projects in agriculture and the creation of new industrial areas and cities in the desert. All these developments require water.

Although rural development and agricultural activities depend on several political, economic, technological, social, cultural and international factors; water is the main input for agriculture. Without good water management, no rural development will be possible. The availability of sufficient water with good quality is necessary to maintain (and further improve) the farming conditions in the old lands.

Current problems can be grouped into numerous types; flood irrigation, seepage, poor network conditions, and water quality are the main themes. The law does not lay down modern irrigation techniques in the old lands (drip, sub-surface and sprinkler irrigation). Participation of users in system operations and maintenance is minimum and not obligatory. Flood irrigation and devises (drip and sprinkler irrigation should be generalized); in one experimental pilot in Upper Egypt, drip irrigation decreased sugarcane water requirements to only 9000 m3/fed. With yield up to 60 tons/fed. Land levelling should be enhanced to minimize water losses (runoff).

Egypt is the End-user country of the Nile water; it is therefore affected by all Upper Nile activities. The HAD secured short-term water quota for Egypt. However, the water supply is not enough for the old lands (three crops per year) and the new lands altogether; unless water use efficiency increased. Budget and financial resources needed to maintain the eco-systems should be made available.

Most old lands are subject to over-irrigation, mid-day irrigation, and unstable micro-economic conditions. The night irrigation reduces the water losses to evaporation and thus saves water. The over-irrigation leads to reduced crop yields and land productivity in addition to less output per unit water used. Water shortages and deteriorating water quality will reduce the available water for the old lands. Some high value crops are not cultivated because farmers can not find adequate cooling, storing, and transportation facilities. Water economy requires promoting those crops.

The three main challenges for water and biodiversity are:
- Liberalization of the agricultural sector
- Deteriorating infrastructure
- Water pollution

8.3 Diagnostics

As the scope for supply augmentation decreases and as urbanization and industrialization increase, the need to protect water quality grows proportionately. The need is most urgent in the old lands, where canal and drain flows are often "cross-connected" and where municipal and agricultural users may draw upon a "common pool" of water resources. Water quality protection can be achieved through both supply and demand measures. Supply measures include provision of municipal and industrial wastewater treatment facilities. Demand measures are measures aimed at influencing users to reduce waste or provide adequate treatment. A wide range of policy instruments, such as command-and-control regulation, economic incentives, and various types of awareness-based initiatives, can be developed to assist in implementation.

The great institutional challenge MWRI faces in this area is that although the Ministry has the overall mandate to protect Egypt's freshwater resources, its authority is limited by the dispersion of relevant policy-making, budgetary, and regulatory powers among ministries, (including MHUUD, MSEA, MALR), the governorates, the water/wastewater utilities, etc. The MWRI institutional vision and strategy anticipates a coherent national policy and strategy, an integrated legal and regulatory framework, and a commitment by authorities at all levels to consistent implementation and enforcement.

The Irrigation Improvement Project (IIP) provides farmers with improved technology and infrastructure for managing water distribution within the mesqa. Importantly, the technology was accompanied by a cost-sharing program and the establishment of mesqa-level water users associations (WUAs). The IIP technology increases farmer control over water applications, thus enabling higher and better yields and shifts to higher-value crops; while improved downstream control infrastructure reduces water losses. The IIP technology entails single-point pumping to the mesqa and so requires farmers in the mesqa group to agree on water distribution schedules and enforce these agreements (internal control and local conflict resolution).

The WUAs have proven that groups of up to 200 farmers can organize themselves to improve water distribution equity, increase the productivity of water supplied to the mesqa, operate and maintain mesqa infrastructure, and collect fees from members to support O&M and mesqa administration. The Integrated Irrigation Improvement and Management Project (IIIMP) will aim to replicate these measures on an additional 500,000 feddans. In addition, MWRI established a Central Department for Irrigation Advisory Services to facilitate and guide WUAs formation; the department has developed a package of standards guidelines and training materials which can be used to replicate WUAs formation and which can be adapted to support WUOs formation as well.

The water users' organization (WUO) concept has been up-scaled to the branch canal level at several locations through PWM programmes in Upper Egypt, Fayoum, and the Delta. A draft amendment to Law 12/1984 has been prepared to allow for legal transfer to these organizations of responsibilities for managing, operating, and maintaining (MOM) components of the irrigated agricultural schemes, as well as recovering selected MOM costs.

User's participation is certainly the pivotal reform element. Potential benefits of user's participation include:

- Greater transparency and equity in water distribution, leading to greater water productivity and reducing the burden on MWRI district engineers of managing water distribution and operations in an increasingly complex and demand-driven system.
- Increased willingness and ability of farmers to bear costs of Irrigation and Drainage service provision.
- Increased mobilization of local communities to hold water users accountable for water pollution, and work with stakeholders to identify, plans, and finance pollution control.

Participation comes in different shapes and sizes. It is common to distinguish between joint management and management transfer as extreme options, recognizing that any actual case of participation may lie on a band between the extremes. The REFORM envisages transfer of O&M responsibilities to a WUO, keeping project planning and implementation authority under the MWRI.

Participation should entail rights and responsibilities for users, including responsibilities for shouldering costs. The process of building participation is designed as a series of agreements between the MWRI and the WUO, in which increasing rights are transferred as the WUO demonstrates its capability of discharging increased levels of responsibility.

Participation generally aims at:

- Better information flow between users and the IWRMD.
- Reduced head/tail inequities and Greater efficiency in water use.
- Increased O&M costs for better system conditions and hence productivity.
- Greater responsiveness of MWRI and Better maintenance.

8.4 SWOT Analysis

Strengths	Weaknesses
• Water Balance • (Efficiency, Productivity and Recycling) • Effective Water Management • Experience and HR • Good Initiatives and Practices • (Clean agriculture, organic methods, …) • Participation and Coordination • Awareness • Broader Varieties of Income Sources	• Illiteracy • Deteriorating Infrastructure Conditions • Marketing • Low Farm Income • Fractional Transparency • No Policy Evaluation • No Policy Follow-up • No Public Consultation • (Privatization and Improvement)
Opportunities	**Threats**
• Incentives for Good Practices • Punishment (Law Enforcement) • Political Will • Cost Recovery • Integration • Harmonization	• Administrative and Legal Frameworks • Public Health • Environmental Deterioration • Global Changes (GATT, Bio Fuel) • Climatic Changes • Resources for Income Support

PSP

Water management in the old lands (small areas and traditional irrigation and agriculture methods) is not highly efficient (compared to other irrigated areas in Egypt). Although water and agricultural policies and projects consider environmental elements as indicators, the concepts of biodiversity and water for environment are not given separate component. Biodiversity and environmental management should be formulated as part of the strategy.

Loss of agricultural lands to urbanization is due to the better commercial value gained by farmers when their arable lands are transformed into residential purposes. The income support and better farming conditions can reduce this gap.

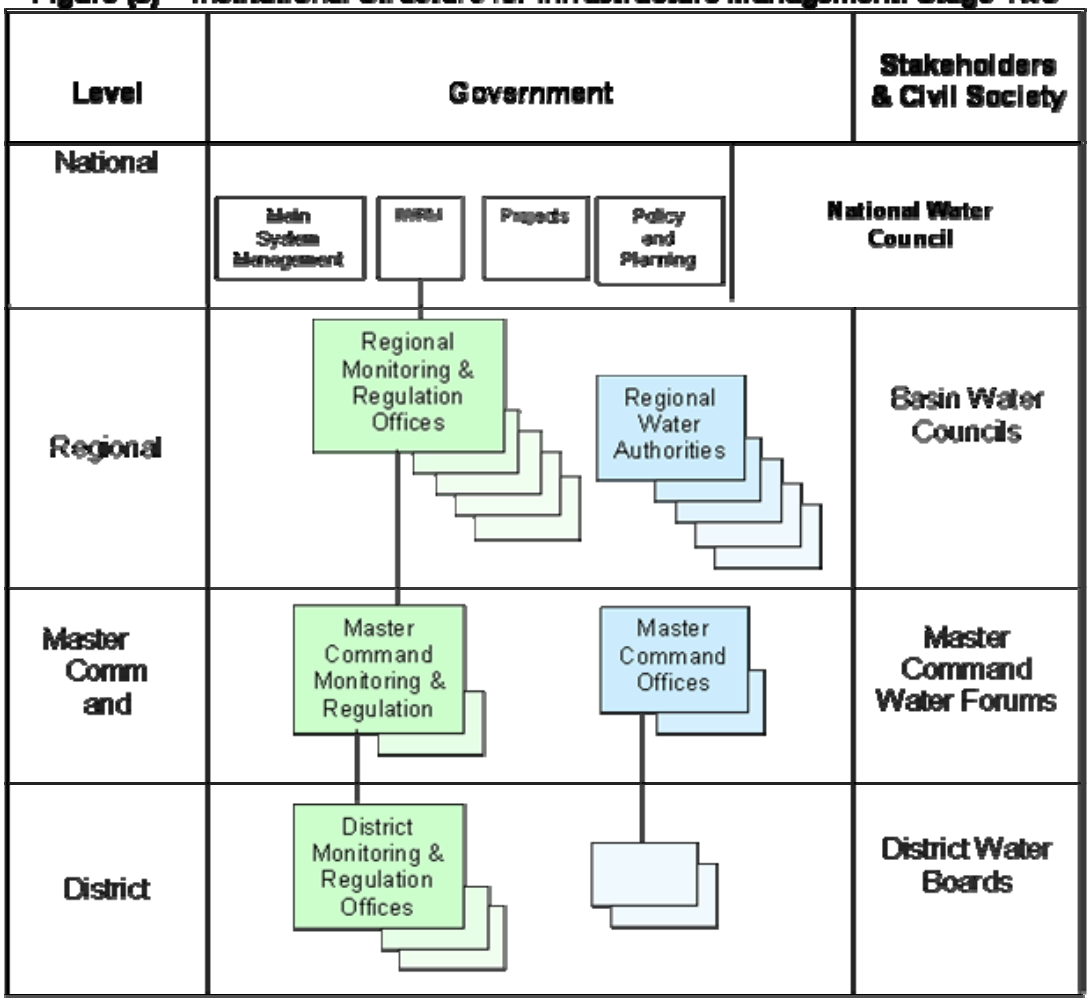
Water tables are high in the delta; soil salinity and water-logging need modern irrigation methods. This requires investment, training and awareness. Trained labours are needed.

There are currently some 850 BCWUAs in informal operation in several directorates, notably Fayoum, Beheira, and Kafr al-Sheikh. These organizations will be legally authorized to engage in assessment and collection of user charges, budgeting, contracting, etc for full infrastructure O&M. The present role of the associations (at tertiary, branch canal, and main canal levels) in problem solving, conflict resolution, cooperation and coordination among users; and between farmers and agencies. The following figure shows the institutional framework for reforming the water sector.

With the growing role of water boards, the planned WRM MIS will contain at a minimum the following modules: GIS, MISD, flow monitoring, and water quality monitoring. It may be economical to also include a billing module, but this would be a service provided to water boards; the water boards would be responsible for collection. The MIS must include:

- All inflows, outflows, and return flows within and between WUO boundaries.
- Regular data on water quality at off-take and discharge points.
- Biweekly cropping patterns and plans (MISD) for each branch canal area.

Figure (3) Institutional Structure for Infrastructure Management: Stage Two



System implementation may require extensive installation of flow measurement equipment and water quality sampling and testing systems. It is possible that the MWRI and National Water Research agencies could be assigned system design and implementation, building upon the IWM and MISD designs.

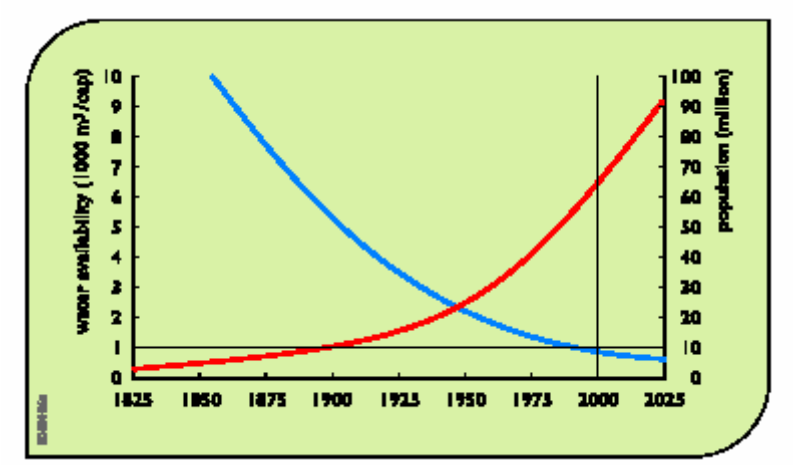
The capacity for participatory water management will have to be built at all levels of the system. One option is to build capacity from the bottom up, extending and building upon current MWRI efforts at the Branch Canal and District levels. (The DWB efforts are of particular interest because they involve multiple types of water use). The other option is to constitute all levels in parallel.

Ensuring adequate representation by all segments of society in water board governing bodies is required. The MWRI will be responsible for developing regulations and procedures governing board composition, elections, and terms of office. It is important to ensure the accountability of board decision-making by providing channels for users to report misconduct or complaints to the Ministry, developing and enforcing regulations and procedures regarding investigation and treatment of misconduct, requiring audits of board financial accounts, and communicating water management rights and responsibilities to board members and their constituents. Transparency of WUOs decision-making by requiring some decisions - such as approval of the annual budget - to be opened to public review and scrutiny, is also necessary. Income support could be part of the financial resources.

8.5 Business as usual

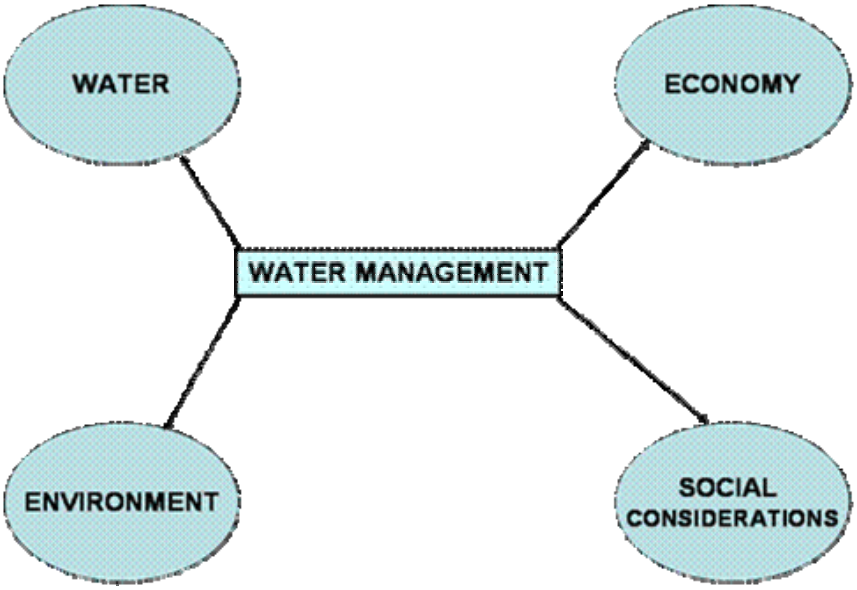
There is an intensive population pressure in the Nile Delta and Nile Valley, the old lands. Land fertility is deteriorating progressively. Productivity is hindered by combined technical and socio-economic factors. Urbanization and desertification lead to dramatic loss of arable lands. Salt is one of the most prominent pollutants that result from irrigated agriculture. Salt is accumulated in the soil or transported to the drainage water.

Excess irrigation water can also mobilize salts that were already present in soils and underlying layers. This can result in significant salt fluxes to canals or drains (e.g. in the fringes of the Western Delta). In addition to salts, the agricultural drainage water contains agrochemical residues (from fertilisers, pesticides, herbicides, etc.) that are serious contaminants for downstream water users. Part of this pollution results from the cleaning in the waterways of equipment or storage vessels that were used to store or spray agro-chemicals. The disposal of liquid animal waste pollutes both surface and groundwater. In groundwater, agricultural nitrate is a notable problem. The following major impacts of agricultural activities on water quality can be identified: increased salinity deterioration due to chemical fertilisers and pesticides; eutrophication of water bodies due to increase in nitrogen; and phosphorus nutrients from fertilisation.



Egypt currently imports about 50% of its wheat and varying proportions of other agricultural commodities and processed food, whereas rice, potatoes, cotton and citrus are exported. Although Egypt is one of the world's largest food importers, this import accounted for only about 27% of the total import bill in 1997. The present agricultural strategy is not based on self sufficiency but on food security, using Egypt's competitive advantages. Maximising food self-sufficiency in 2017 through measures would result in the production of large quantities of basic staple grains, which are relatively low-value in the international market.

Biodiversity is defined as "Variation of LIFE and their interaction with Biology and Eco-systems at all levels. Drainage to lakes and water bodies diminishes the biological and aquatic life (fisheries and vegetation). Balance of the eco-systems is disturbed. Birds and aquatic plants are seriously damaged. Restoration of natural balance takes decades. The biodiversity should be assessed in terms of both quantity and quality of species. Three criteria should be considered: Reproduction, Distribution, and Health.



Current status can be described as follows:

- Lack of motive, implications and incentives for improved practices
- Mis-match of supply and demand; no defined cropping patterns
- Considerable industrial growth with no effluent treatment
- Increased urban and rural municipal water demands
- Striving agricultural policies (inter-cropping, short-term varieties, …)
- Fragmentation of agricultural land units (no of plots per basin)
- Design of sub-surface drainage for non rice crops (needs adaptation)
- Lack of knowledge and awareness

The water management main goal is to satisfy various water demands, achieve maximum economic return, well maintain the system, and preserving the environment. The MISD collaborative programme between the MWRI and the MALR improves the water delivery index (near unity) and thus leads to water saving.

Deteriorating water quality harms biodiversity; Ibis, useful weeds, and Nile Perch fish almost disappeared in many locations and other rodent animals and worms increased with adverse effects on the biological balance. Soil conditions also declined. Some over-growing vegetations blocked water ways and increased water losses. Agricultural residues (flowing into water courses heavily loaded with chemical fertilizers and pesticides) increased the problem of demolishing species.

Awareness is a main tool for better water management and environmental control. The MALR has 28 central directorates all over the governorates; with subordinates (agricultural districts and local offices in villages). Typically, around 600-800 agriculture extensionists per governorate exist. This comprehensive representation can be used for the awareness raising, consultation, interaction with farmers at all levels, and advisory and extension programmes.

A package of good agricultural practices could be designed based on the long experience of the governmental, research and private institutions. MALR Modernizing the traditional furrow method led to more than 1/3 water and fertilizers saving.

Raising farmers' living standards, subsidising the agricultural inputs for small farmers, and accelerate the process of cashing the price of the products after delivery are some measures for improved rural areas living conditions.

ENTITY	ROLE
GOVERNMENT (Coordinated inter-ministerial actions)	- MALR: Cropping Patterns OFWM Practices - MWRI: Water Allocation Water Distribution - MSEA: Environmental Control Setting Standards and Norms - MHP: Monitoring and Inspection
WUOs NGOs	- Leader Persons and Change Agents - Field Level O & M - Rationalization of Inputs - Awareness and Conflict Resolution - Promoting Clustering (Merging)
USERs	- Need Orientation and Adaptation - Opt for Win-Win Approaches - Need Education and Training
PS Investors	- Marketing - Establish and Expand Agro-industry - Provide Training and HRD

8.6 Optimistic Vision

Egypt is increasingly in a position to produce higher value food crops (e.g. fruits and vegetables) and non-food crops (e.g. flax and cotton) and trade them to purchase staples and have additional revenue and employment as well. Maximising national income is therefore considered a more reliable approach to food security than self-sufficiency. The large discrepancy in the balance of payments between the import bill and export proceeds is probably a larger threat to economic sustainability and thus to food security. This trade imbalance could best be tackled by promoting exports rather than by curbing (food and fodder) imports. Thus, food policy should focus on making the best use of all productive resources, which for agriculture include: land, water, labour, climate and the proximity to vast export markets by growing crops for which it has a comparative advantage.

Field irrigation methods and devises should be improved, including field irrigation canals. More night irrigation should be encouraged to save water.

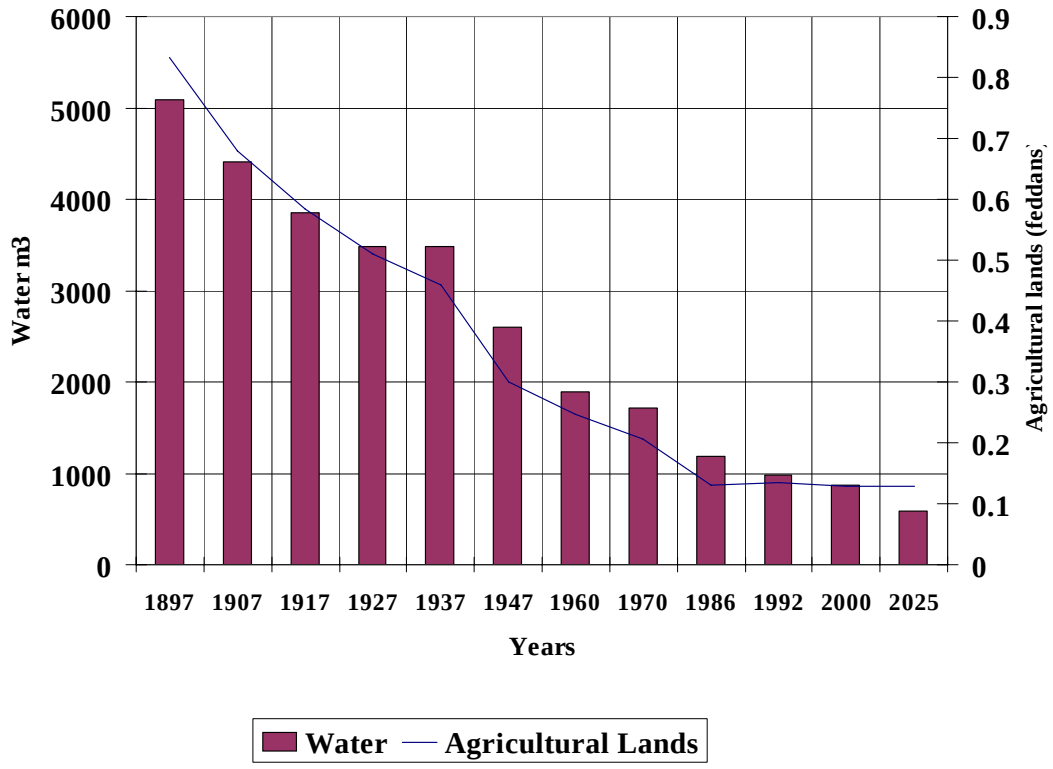
Rural households with piped water supply (into the residence) and full access to sewerage services will rise to 95-100% by 2025; nearly 5% may have to continue getting drinking water from standpipes. Favourable living conditions depend not only on farmland production, income and value but also on services and social structures.

Water for nature (Fisheries and aquaculture, Lagoons and Inland lakes) concept should be part of the water demands. Monitoring of species abundance, distribution, quality, reproduction, deformation, and community structures (birds, fish, aquatic plants, sediments, soil, … etc.) is necessary to preserve the biodiversity.

In the Northern Delta Lakes, different aquatic species flourish in different parts of the lakes. The more stable, slightly brackish situation also has led to extensive development of aquatic vegetation, providing the fish species with spawning and nursing areas, and providing an extended substrate for fish feed organisms.

Lake Bardawil is also a Ramsar site and one of the most important water bird wintering areas in North Africa. Apart from Lake Malaha's importance for fisheries, the depression is also an important water bird wintering and breeding area.

To enlarge the inhabited space of Egypt there is much Government emphasis on developing agricultural and industrial activities outside the Nile Valley and Delta. For the year 2025 it is expected that the population living in the desert areas will increase from less than 2% in 2000 to 25% of the total population. The agricultural sector in 1990's provided 32% of the jobs, and manufacturing 14%. The official unemployment rate was 9.4% in mid 1990's and decreased to 7.9% by late 1990's. The unofficial rate was estimated as high as 17 to 20%. By 2025, the employment in agriculture and agro-industry is expected to increase from the current 5.0 million to 6.2 million. Employment in the industrial sector is roughly estimated to increase from 2.2 million to 5.0 million. Although the average per capita income in Egypt is expected to increase, the average income in agriculture is likely to reduce due to the lower crop intensities. Women's roles in agriculture and irrigation are being promoted by means of WUOs.



Per Capita Share of Water and Agricultural Lands

The above figure shows the trend of water and land to 2025. This trend of moving towards water stress justifies the need for old lands rehabilitation policy that maximizes the outputs and achieves better farming practices.

8.7 Reform impacts on Old Lands

- Irrigation improvement projects is not directly involving farmers in the design and implementation of the system. This however was corrected in the recent programmes such as IIIMP and Northern Delta IIP.
- Cooperation and support of the local administration is needed. Participation of farmers at the field level is necessary. Government staff should jointly manage (plan, implement, monitor) the local water systems with farmers.
- Demonstration of results and positive impacts improves the time management of reform programmes.
- WUOs should have a key role in harmonization of cropping patterns through interaction, dialogue, negotiation and coordination among farmers.
- Poverty affects negatively living conditions, health, education, and social infrastructure. Poverty will increase; unless:
    1. Non-agricultural activities are encouraged
    2. Minimum Partial Food Security is targeted
    3. Political Economy is enhanced
    4. Consolidation of policies, structures, and procedures
    5. Monitoring and Forecasting Global Changes
    6. International Price Levels are considered
    7. Promoting Gender and Participation aspects
- Role of women is very important in active participation, water saving, problem solving and decision making. Residential women have vital role in water quality conservation, solid waste management and health improvement.
- By 2025, it is important to maintain the present system performance levels (and improve if possible) so that no more deterioration happens.
- Research should be conducted on land and water quality. All policies should be environmentally safe. Local and intermediate drainage reuse should be improved. Continuous water flow in improved areas will increase agricultural production.
- New water management policy can be developed to integrate water security, virtual water, political economy, and national programmes. Measurement of inflows, outflows, water quality and groundwater characteristics is necessary within the policy implementation and assessment. Without accurate water management data, water planning will not be improved.
- Marketing is very important to farm income and living standards. Establishment of agriculture markets for small farmers will not only reduce the cost of marketing but will also increase the net income and open wider scope for marketing and export.

8.8 Discussion

It is necessary to face the major challenges and further develop rural activities to improve the performance of the old lands, to ensure that the local as well as national economic and social objectives are achieved and that environment and health are protected.

The best mix of prevention, treatment and protection measures that results in a water quality that complies with reasonable standards should be adopted. The level of investment needed to provide all rural people with safe drinking water and adequate sanitation facilities should be provided. Institutional mechanisms should be developed that can best cope with the increased pressure on the water resources in the countryside.

The development of income support measures should be strongly correlated to the ongoing and future reforms. This will not only conquest the existing gaps but also mitigate the reform side effects and risks. The reforms and the IWRM approach improves water management at the local level, irrigation scheduling is improved, land conditions and productivity increased.

All the relevant stakeholders have to be involved in developing water management plans, both at a horizontal level (the various ministries involved) as well as vertically (governorates, water boards, various user groups, etc.).

Major water system (infrastructure) rehabilitation is required for those entities to function adequately. Incorporation of system rehabilitation and modernization into the decentralization and participation reform strategies is therefore essential for IR Vision implementation. Transferring rehabilitated and modernized systems (schemes) to WUOs and PS is a basic step towards more efficient water resources management. Integration of the Management of Irrigated Agriculture Infrastructure into the Institutional Reform process is therefore necessary through a roadmap that integrates the current design, construction, operation and maintenance practices into the institutional set-up depicted by the institutional reform strategies; with well-defined inter-relationships and coordination mechanisms amongst the various stakeholders, Ministerial agencies at central and regional/local levels, water users' associations, and the private sector bodies; both vertically and horizontally.

Improvements in operational and managerial practice and quality services delivery are significantly effected by the existing institutional framework. The contribution of such measures to sustainability, efficiency, and equity should not be undervalued. Although the MISD (matching irrigation supply and demand) and the Drainage water quality monitoring networks programs are valuable and necessary elements of improved water management, their limitations are obvious. MISD (which, it should be noted, has institutional reform elements insofar as it involves new forms of inter-ministerial cooperation) can only improve efficiency if the infrastructure is capable of delivering the revised distributions to all the users in the area. It should also be noted that MISD is fundamentally a supply-side management tool oriented to meeting

rather than managing demand. As for the water quality monitoring, it is only a first step toward managing water quality, since it does not alter the water pollution conditions. Improving water quality will require multi-dimensional reforms, including mechanisms for improved wastewater management policy and planning, incentives for pollution prevention and control, and increased financing for wastewater treatment within a comprehensive water quality management action plan.

The capacity for participatory water management will have to be built at all levels of the system. One option is to build capacity from the bottom up, extending and building upon current USAID, Dutch, and other donors' supported efforts at the Branch Canal and District levels. (The DWB efforts are of particular interest because they involve multiple types of water use.) The other option is to constitute WUOs all levels in parallel; with adequate inter-linkages and communication structure. Staff of professional water, environmental, and data management specialists will be needed to provide decision-making support to Basin Water Councils BWUCs and Directorate Boards.

Design of the accounting and financial management systems does not pose major technical difficulties, but implementation progress is dependent upon the processes of boundary redefinition, restructuring, and decentralization of the Ministry at regional, directorate, and district levels. It is likely that some of the existing directorates (and districts) will have to be reassembled to reflect command area boundaries. Following the reorganization and initial system implementation, RWMA and MCA Board staff will have to be trained in conducting cost-of-service studies to allocate costs equitably to various types of users and watercourses. Finally, MWRI will need some years to implement benchmarking systems and to design and implement systems of economic regulation.

To this end, an important question is whether reform should proceed in a strict bottom-up manner, under which reform would not progress from one level of the system to another until all the units at the lower level had been reformed. In general, the REFORM endorses a bottom-up approach as far as WUO formation is concerned. But the development of integrated units (IWMD and IWMGDs) will proceed at all levels simultaneously: the Water Resources Management Information System (WR MIS) should be a fully integrated, and this will be easier to achieve if IWMUs are developed at all levels at once. Since the region is the apex level, it is logical to adopt a staggered implementation schedule, beginning with the three regions in which IWRM is active, and following with the western Delta region (where IIIMP will be active) and the Middle Egypt region. Piloting could be a suitable approach that should be evaluated with the REFORM implementation/action plan.

Within the reform strategy tools, there are the legal and financial frameworks that provide the enabling environment for the reform. The following instruments are required for successful reform:

1. Decentralized decision making
2. Renewed client-oriented agricultural extension and demand-driven water advisory services

3. Modern technologies, Information, Capacity Building and Training
4. Better rural living standards
5. Improved agricultural exports and foreign-exchange earnings
6. Better labour redistribution and income diversification
7. Good access to domestic and international markets
8. Improved productivity and land use
9. Awareness at all levels
10. Value of water and Trade

Pollution, particularly from municipal and industrial sources, is on the rise. Its effects are wide-ranging, from reduced capacity to recycle irrigation water (resulting in reduced overall water efficiency), public health risks to farmers, downstream municipal users, and crop consumers, effects on aquatic ecosystems and recreational uses, reduced competitiveness in agricultural export markets, higher costs of municipal water treatment, etc. Causes are also multifold: beyond the inevitable trends of population growth and increased urbanization and industrialization, wastewater treatment works coverage is limited, wastewater utility O&M is often ineffective, and wastewater system investments are not planned with a view to maximum health, economic, and environmental benefit.

The most important challenges for water management and environment include:
- Reduced availability per capita, as population and demand grow with few prospects for additional supply
- Diversion of Nile supplies to large and ambitious new lands development projects
- Increasing water pollution
- Increasingly individualized cropping patterns, which call for more finely-tuned allocation and distribution
- Significant needs for rehabilitation and improvement
- State budgetary constraints.

8.9 Conclusions

Water is a limiting factor for development of the rural areas in Egypt. Agricultural, municipal, and industrial activities are primarily dependent on water availability and quality. Water management, environment and biodiversity are thus main elements of the targeted dynamic policy. Better water management, sound environmental conditions and stable biodiversity will not only support the rural development policy but also secure the enabling environment needed for the basic upturn pillars of efficiency, equity and sustainability.

Securing water for food production is a prime objective. Agriculture is a major economic activity in Egypt. Although the agricultural sector represents only 17% of the GDP nowadays (down from 40% in 1960), it still provides employment for about 40% of the labour force and plays an important role for many people as sustenance farming. However, agriculture is a major water consumer, especially in an arid country as Egypt where nearly all agriculture depends on irrigation water.

Agriculture accounts for about 95% of the total net demand in Egypt (with 4% for municipal and industrial water and 1% for fish ponds). Population growth in combination with the horizontal expansion plans of the government will increase the demand for irrigation water. A considerable increase in efficiency is needed to make this additionally needed water available. Such an efficiency improvement will have important social as well as economic impacts, e.g. when changes in the cropping pattern are required (shift from crops with a high water demand to less sensitive crops).

Creating popular awareness and understanding is vital. The limitations in the supply of water and the urgent need for water quality improvement require public awareness of these issues. This awareness is needed to mobilize effective support for sustainable water management and induce the actions required to achieve changes in behaviour. Additionally, public awareness and subsequent pressure for action may help in stimulating the political will to act.

Protection and restoration of vital ecosystems is necessary. The aquatic ecosystems in Egypt are seriously threatened by the deteriorating quality of the water. The remaining systems are limited and fragile and in dire need to be protected. Moreover, polluted systems as the coastal lakes should be restored to their original states. Not only will this benefit the ecosystem involved, also the socio-economic 'use' of these systems will improve considerably (fishing, recreation, etc.).

The ambitious horizontal expansion plan aims at reclamation of about 3.4 million Feddans by 2017; this means that the irrigated land will grow to nearly 11.5-12 million Feddans by 2025. With the limited (and virtually fixed) water supply, the old lands will undergo stressful conditions that call for enhanced practices, better management, improved efficiency, and innovative approaches for more crop per drop. Budget support can play a major role in this curriculum.

The on-going reform in the water sector will greatly support the dynamic policy for the rural areas (Nile Valley, Delta and Fayoum); the strategies of Integration, Decentralization and Participation are of particular importance. The application of an income support programme will depend on integration of actions among all authorities, agencies and stakeholders; decentralized authorities to regionally and locally execute it; participation of all involved parties (especially farmers unions and associations) in proposals, design and implementation. Almost all the old lands are covered with Water Users Organizations that could effectively and actively participate in the practical part of the scheme. Their interaction with the local individuals will facilitate the strengthening of the Good Agriculture Practices and the allocation and distribution of budget support.

Within the Context of Income Support, the interaction of the Private Sector is important. PS investors should contribute to the sources of the income support. Achieving more reliable (quantity and quality) supply of raw inputs to their industries could be a good reason to contribute. Raising the standards of the rural areas will

enable the PS to retail more services (transportation, banking, education, communication, leisure, technology, …etc.) for which PS contribution is needed.

Promoting clustering (merging small land holdings into manageable/sizeable blocks) is an essential component of the proposed policy. This should be given highest priority due to its effect on technological and economic aspects. Several problems, such as inconsistency of cropping patterns and wasteful irrigation water, will be curtailed. The management of the blocks could be outsourced to PS or the WUOs. Market based income support mechanism could be applied. The consolidation is however management based and does not interfere with ownership and inheritance. The formulation of operational water users organizations could be the cornerstone in this regard. To this effect, the clustering and budget/income support could be practically assigned to the WUOs (responsibility against accomplishment). The role of WUOs in the implementation of the income support programme is vital.

The proposed INCOME SUPPORT should be harmonized and streamlined with the relevant mechanisms such as Cost recovery, credits, customs, taxes and subsidies.

Although the overall water use efficiency in Egypt is nearly 80%, filed application efficiency is around 70%, and irrigation efficiency ranges around 60%; there is a room for improvement. Better efficiency in the old lands is the only way for the new lands. Land reclamation is totally dependent on water saving programmes.

It is strongly recommended to establish a geographical Database on biodiversity with parts on historical trends, existing status, future expectations. Locations affected by projects and development should be defined and the damage should be controlled. Impacts of interventions and interactions should be completely addressed.

It is impossible to achieve the required improvement through one-dimensional course of actions. An integrated approach should be designed and applied to cover technical, economic, social and institutional aspects of rural development. The concept is auspicious and will be very useful if applied within the existing legal and administrative systems with intensive involvement of the target group of farmers.

Income support should replace (totally or partially) the production subsidies (inputs, processes, and outputs). This will create the sense of equity; prioritizing the target group of the marginal and small farmers (with less support to medium and large investors who can be given tax relief, exemptions and credit facilities). Part of the income support funds can be committed to technical support, improving road conditions and transportation facilities, strengthening the civil society and NGOs, providing better living facilities (water and sanitation, electricity, internet, theatres, cinemas, shopping centres, …) to improve living conditions in rural areas.

Income support eligibility criteria
- Clustering (joining defined plots for modern water and agriculture techniques)
- Good agricultural practices (production volume and quality)
- Water saving and water quality improvement (policy framework and regulations)

- Better maintenance and infrastructure conditions (safe disposal of wastes)
- Compliance to cropping patterns and guidelines (strategic and export crops)
- Quality of the agricultural products (national/international specifications)
- Participation (WUOs, consultation, governance, training, ….)
- Growing water saving crops (no unauthorized rice, climatological crop selection)
- No violations or encroachment

Stratified income support system should be designed to guarantee minimum income to small farmers in order to keep their agricultural lands into production; a second layer of income support should be allocated to raising efficiency; the third layer should be for modernization, water saving, water quality improvement, and exporting cash crops. The small land holders need incentives for social and cultural upgrading, reuse and recycling of intermediate and final outputs, clustering and joint management of basins (cluster of small farms); and legislative and market-based measures for strategic and water saving crops, compliance with regulatory framework, and dynamic policy guidelines and measures.

In conclusion, the rural areas in Egypt need more attention. The economic and social infrastructures should be strengthened. Water is a key factor. Better water management and sustainable biodiversity are very important. The dynamic policy for the rural development should consider the on-going reform in the water sector. The decentralization and participation initiatives will facilitate and support the income support approach. Water users organization represents a qualified partner for the central and regional governmental institutions in this approach. The role of the WUOs will not only improve awareness and communication but also support clustering, good water management and agricultural practices, and compliance with eligibility conditions. Integration and coordination of rural development efforts (by governmental organizations and community organizations) is required. Both in-king and financial income support is needed. Strategic agricultural policy should be developed with income support measures for small farmers to contribute to the national policy. Data on domestic and international markets, cropping patterns, water requirements, water quality and biodiversity is a main input. Stakeholders participation is required; especially farmers and unions. Review and assessment of the dynamic policy should be undertaken regularly with modifications and updating accordingly will guarantee sustainability. The host agency for the income support approach should coordinate and cooperate with all relevant stakeholders during formulation and implementation. Good governance should be maintained within the dynamic policy. Intensive consultation and joint actions should be continued.

8.10 SWOT analyses income support

During the workshop the discussion group on water management, biodiversity and environment discussed their ideas on whether income support would be a feasible policy instrument to make the Old Lands dynamic rural areas. The results of the discussion were arranged in a SWOT analyses.

Introducing “Income Support” as an instrument to promote sustainable marginal farming schemes in the conventional old lands (Nile Valley, Delta, Fayoum) is being investigated within the context of an integrated vision that considers technical aspects, economic factors, social fabrics, environmental issues, cultural values, and other significant elements.

Exploring Income Support to the Egyptian small holders in the agricultural old lands as a core principle of a dynamic rural areas policy for Egypt should address relevant themes and fundamentals such as natural, employment, rural living standards, land degradation, efficient farming, costs, nutrition, and economic stability.

The applicability of the innovative concept and the success of the initiated measures will depend to a great extent on maximizing existing as well as future strengths and opportunities on one hand; and minimizing weaknesses and threats on the other hand. Therefore, understanding, evaluating and incorporating SWOT elements into the proposed dynamic policy is a pre-requisite for applicability and achievement.

SWOT analysis was conducted at two stages, in general terms (during the Thematic Group Meetings) and in specific terms (Institutional, social, legal, and organizational viewpoints) during the final workshop. Both results should be duly considered and properly incorporated into the proposed dynamic policy for rural development.

Strengths	**Weaknesses**
• Acceptance of legal modifications • National and International trends (technologies/tools) • Coordination among governmental institutions • Stakeholders participation • Institutional setup (grouping) • Experience & history s	• Weak Law enforcement • Inadequate Cohesion of laws • Weak Penalties • Non-Equity by legal framework • Distribution of income support Poor rural services • Unsuitable awareness & support • International competition
Opportunities	**Threats**
• Incentives for compliance • Economic and Social Reforms • Enabling Social Fabric • Increased water related awareness (quantity & Quality) • Scientific and research base • National policies and public assets better management	• Outdated laws and Bylaws • Laws do not support clustering • Inability to change laws • Traditional Negligence and Violation • Risk management • Traditional cultural constrains • Poverty • Marketing & Living conditions

8.10.1 Strengths and Opportunities

The present national Water Budget (balance of water supply and water demands) indicates high overall efficiency (75%); with good productivity and wastewater recycling. This provides great prospects for growth and development and represents the basis for improved efficiency and effective water management. The know-how is mastered and the system management could be significantly improved.

Extensive experience and considerable human resources capacities exist. This could serve as foundations for innovation and modernization. Good initiatives and practices are spread (clean agriculture, organic methods …) and can be further promoted. Active participation and coordination is well embedded into the system and thus can be replicated and advanced for the new policy. Awareness at different levels has been emphasized and can be continued based on existing channels and media.

Broader varieties of income sources is an opportunity that is based on the present redistribution of family/individual income categories and sources; and the new horizons that will be created and expanded by the introduction of income support. Moreover, income support will include incentives for good practices and hence will partially lead to more optimal operations and higher management efficiency. Positive and negative measures and compliance streamlining could be strengthened through the introduction of income support to be correlated with legal and community (local) punishment (Law Enforcement); more income support will be dedicated to compliance (percentages) and zero income support for non-compliance. Combined with the polluters pay and violators indemnities, the income support will boost the better use of the natural resources and assets.

The political will is fully fledged at the national, regional and international levels. The country has undergone a significant restructuring and economic reform since the 1990's. Major political, financial and institutional reforms are underway. The political support for modern concepts and innovations is in place. The national trends, policies and strategies could easily interact positively with the income support initiatives.

The generally adopted concepts and approaches of cost recovery, private sector participation (PSP) and public private partnerships (PPP) can be further strengthened by the income support initiative. Moreover, they provide the necessary foundation for successful taking up of the income support through their legal and financial frameworks. The contemporaneous tendencies to cost sharing, cost recovery and cost transfer will be complemented by income support towards cost effectiveness.

The past integration and harmonization efforts would pave the way for collaborative implementation of the income support mechanism. The consultation platform, open dialogues, discussion forums, and cooperation processes are well concretised and could serve well the design, execution and follow-up of the approach.

8.10.2 Weaknesses and Threats

Illiteracy represents the main obstacle for progress, innovation and modernization. The public acceptance, involvement and support to newly introduced concepts and approaches are greatly dependent on the level of education and awareness. Combating illiteracy is essential for sustainable development. Deteriorating infrastructure conditions will threaten the effectiveness of several initiatives such as

joint management, management transfer and income support. Rehabilitation of the infrastructure is a basic step for rural development. Marketing plays a key role in farming and economic and financial returns. Improving marketing (domestic and foreign) will contribute significantly to the targeted dynamic rural policy. Low farm income will bilaterally influence the income support; it will enhance the need for such mechanism and meanwhile complicates the application procedures and basis.

Fractional transparency leads to mistrust, lack of confidence and obtuse public support. Good governance should thus be ensured within the income support procedures and arrangements. Minimum central decision making with decentralized planning and execution powers are needed. Policy evaluation and follow-up should be maintained. The bitter background of virtually no public consultation on requirements and priorities for improvement and privatization should be avoided. Sound administrative and legal frameworks should be developed. Public health should be particularly emphasized. Environmental deterioration should be assigned highest priority. Global Changes (GATT, Bio Fuel, …) should be incorporated. Climatic changes and their effects should be fully addressed, income support can be utilized to cope with the effects and minimize damages. Resources for income support should be adequate and sustainable; they also should be sufficient to expand good practices and achieve national goals and targets.

8.10.3 Institutional, social, legal, and organizational

During the final workshop, the working group conducted a SWOT analysis for the Institutional, social, legal, and organizational bases for Water Management, Environment and Biodiversity. Focus on thematic issues in view of the four points of views led to the following analysis and conclusion:

8.10.4 Strengths

During the last two centuries, substantial changes of directions, policies and trends occurred. Subsequently, legal framework analysis and adaptations were necessary. The constitution was modified recently (2007). Several laws and regulations have been changed to create the enabling environment for unparalleled concepts and approaches. The investment, economy, finance, transport, telecommunication, electricity, construction, and trade sectors had legal adaptations. Therefore, the acceptance of legal modifications is quite supportive. The relevant laws that will affect/affected by income support can thus easily be modified with wide acceptance and support of parliamentarians and legislative committees.

The national and international trends promote market free mechanisms and unrestricted trade and liberated economy. Those notions and transfer support unconventional approaches such as income support. The international and national trends will enable integration and adoption of income support as a policy tool for

better management and compliance. Modern technologies and tools could be readily introduced as part of the package for improved practices and hence income.

Coordination among governmental institutions has been never better. The coordination among the Ministry of Water Resources and Irrigation (MWRI) and the Ministry of Agriculture and Land Reclamation (MALR) is on-going. Cropping patterns, on-farm water management, land reclamation, and advisory services are well coordinated between the two ministries. Similarly, coordination among other ministries and agencies is most advantageous. This can be used to boost the income support approach that will need strong cooperation among various institutions.

Stakeholders participation is a new concept that is being promoted. Participatory water management (PWM) is now practiced for decades at tertiary, branch canal and command area levels. Current reform programmes upscale this PWM to districts and main canal level, with long-term plans for governorate and higher levels. This will empower the WUOs, CDAs, NGOs, and other organizations involved in planning, implementation, monitoring, operation and maintenance. The social fabric has been greatly enriched by this effect. The developed experience in the fields of water management and environmental protection will serve as a basis for accommodating income support as one of the instruments that serves both national (country) objectives and the local purposes and goals. The widespread familiarity with participation will be a good starting point for the application of the concept of income support with well regulated input by all involved parties and main actors.

Institutional setup that is being built will not only incite income support as one of the reform instruments but also provide the necessary requirements for carrying out the arrangements. The shared authorities and responsibilities among governmental entities, private sector, WUOs, and multi-disciplinary organizations at each hydraulic and administrative level will facilitate grouping the small land holdings into blocks of reasonable acreage (50000-100000 acres) that could be managed through an operation or management contract with modern irrigation and marketing methods. In fact, income support could be used as a motivation factor (incentives) for the land clustering itself. The reformed institutional setup will serve as the carrier for the new approach and will provide the legal, financial and administrative tools needed.

The old lands is an irrigated agricultural system with a long history; with mega projects, achievements, lessons learned and extensive experience. The technical skills gained and the capacities developed along the historical developments will be the asset for the income support. All the accumulated experience will be used to formulate the approach and turn it into a success. System sustainability and performance will be significantly enhanced. Technical, managerial, legal, and organizational inputs needed for the implementation will be secured; based on the available experiences and knowledge of officials and farmers.

8.10.5 Weaknesses

Weak Law enforcement is noticed occasionally. This could be because of several economic and social considerations. Relaxing laws and regulations affects adversely infrastructures, natural resources and efficiency. Water, environment and biodiversity are very sensitive to law enforcement. Economic and health effects result directly with negative impacts. Law enforcement is a key factor for income support.

Inadequate Cohesion of laws is sometimes discovered. The water law may dictate something that is made fully optional (or even not necessary) by the environmental law. Some tight norms and standards are totally or partially lighten up by a complementary or intersecting law. The result is lack of law enforcement and hence deteriorating systems and resources.

Weak Penalties are set by the current legal systems. The profit (return) due to breaking the laws far exceeds the values of fines and penalties and thus compliance is not very high. The penalties were set decades ago at levels that were adequate long time ago but are too little today. The present laws should be modified to modernize the level of penalties. Income support will provide the incentives side that needs to be balanced with corresponding disincentive side.

There is slight Non-Equity expressed by the current legal framework. The incentives are frequently missing. The penalties do not distinguish between small farmer and big investor, head or tail user, small or great breaking. Equity should be ensured.

Distribution of income support should be made equitable among different groups, geographical areas, sizes, land areas, different levels, and most importantly among family members (women and children).

Poor rural services should be improved as part of the income support strategy. Introducing income support to farmers with poor services will not have the desired effects and will not enhance sustainability.

Unsuitable awareness has been a problem in the past; with minimum effects. Well designed and delivered messages for the target group will generate the support required for the new approach. Special awareness may be required.

International competition is very high. Egyptian farmers enjoy the relative competitive advantage of early growing seasons on one hand but European and American farmers cultivate hundreds of hectares using the rain and modern systems.

8.10.6 Opportunities

Incentives for compliance can be introduced through income support. Compliance with national policies and trends, active laws, and regional/local measures could thus be improved. Maximizing outputs and preservation of resources will take place.

Economic and Social Reforms have been undertaken for the last two decades with results that will pave the way for income support. These reforms changed the existing conditions and increased acceptance of new initiatives. The income support could be used to partially compensate the rural poor farmers for the negative impacts.

In the rural areas, the enabling social fabric sustained agricultural and community development for centuries. This modernized social fabric could be used as a platform for income support. It will accommodate the concept, promote it, and enhance it for better applicability and effectiveness.

Increased water related awareness (quantity & quality) through the reform and IWRM is a cornerstone for water management, environment and biodiversity related income support elements. The increased awareness among all stakeholders and at all levels will provide the basic understanding and interaction with the concept.
The existing scientific and research base will provide the analytical tools for analysis, discussions, studies, and research needed for the design and implementation. Some economic, financial and legal studies will be required for the income support. The scientific and research base; with the long experience and skills; will have great role in adaptation and application of income support; with related technical studies.

National policies and public assets better management have been a highest priority that could be even strengthened through income support. Some points (weight) will be given to promoting national policies (compliance) and better o & m.

8.10.7 Threats

Outdated laws and bylaws is a major threat. They can disable adoption of income support (in full) or partially through its components. Some relevant laws need revision, updates, and amendments. This approach will require liberalised legal framework that suits the advanced approaches and instruments.

Existing laws do not support clustering. Although the new approach will logically promote clustering; it needs a legal cover for the practical part. Merging small farms into bigger clusters should be allowed and promoted by law. All necessary support measures and arrangements should be also included in the amended laws.

Inability to change laws represents a threat. Although most proposed changed to the old laws was approved by the legislative system (cabinet, parliament) with no or minimum problems; some innovations and advances may face difficulties due to political or socio-economic constraints. This risk should be addressed.

The rural societies have a long history of traditional negligence and Breaking. This will need great efforts to change. Although income support provide good opportunity for compliance, the awareness and changes required should be executed.

Risk management strategy should be included within and along with the income support approach. There are legal, social, economic, and technical risks that should be fully identified, analysed and mitigated.

Some traditional cultural factors may represent a threat to the introduction, application and further development of the income support approach. The instrument may be delayed by some traditions and cultural considerations that need careful analysis and understanding within the approach.

Poverty is ascendant in the rural areas. This needs a package of actions and measures to improve. Although income support is one of those actions/measures, it needs that poverty is addressed within and outside the approach.

Poor (weak) Marketing and living conditions decrease the supporting factors for income support introduction and a suitable instrument. Marketing and living conditions should be improved before, during and after implementation of the income support as a strategic instrument for better sustainable marginal farming.

8.10.8 Concluding Remarks

Correlating the income support and synchronizing the procedural arrangements with the on-going and future reform elements and strategies will create a common thrust for mutual influences of both programmes towards progressive development.

The results of the SWOT analysis will highlight the strengths and opportunities to further develop and use as the policy pillars and tools. Also, weaknesses and threats will be defined; actions and mitigation measures should be undertaken to reduce or diminish those factors or keep their influence at the lowest possible level.

It should be noted, however, that regular SWOT analysis will be needed during the different phases of the rural policy implementation. The dynamic policy will be modified accordingly. Priority issues, eligibility conditions, target groups, and national (and or regional) objectives will be adapted in light of the SWOT analysis.

9 Employment , Income and Marketing

By Prof. Heba El Laithy

9.1 Introduction

Since the 1970s, a large number of studies have investigated the role of agriculture and non-agricultural economic activities for rural development. Evidence from the developing world suggests that economic diversity in the countryside has the potential to foster local economic growth and alleviate the rural- urban income gap and enhance employment.

Growth in agriculture sector affects and is affected by growth in non-farm sector. Several studies pointed to accelerated growth in the agricultural sector as the basic determinant of increased demand for labour and hence in reduced poverty of the labour class. Literature also shows the rural non-farm sector as dependent on agriculture as the driving force for its demand, and that the goods and services produced by that sector are largely non-tradable. The latter means that they are not saleable in the international market because of low quality and high transaction costs. They depend on increased domestic demand for their growth. Gavian et al. provide considerable detail on these relations from a recently conducted study of small and household-based firms and rural employment and consumption. Martin Ravallion and his colleagues at the World Bank and Peter Timmer (then at Harvard University) and his colleagues, shows that it is rural and agricultural growth, not urban or industrial growth, that reduces poverty and increases demand for labour. That literature also shows a three- to four-year lag before the full benefits of agricultural growth show up in poverty decline and an absence of poverty decline when agricultural land is held in large holdings. These findings are consistent with agriculture's driving the demand for labour through its demand for goods and services produced in the large, labour -intensive, rural non-farm sector.

A large body of recent research has concluded that non-farm activities can be seen as a route out of poverty, and that the impacts of non-farm activities on growth and inequality depend on the type of non-farm employment in terms of education and skills as well as income share of non-farm activities. De Janvry and Sadoulet (1993) argue that in land-constrained areas of the developing world –like Latin America and certain parts of the Middle East and Asia – focusing directly on the rural non-farm sector might provide a better way of increasing the income and employment opportunities of the poor. In this view, income earned in the rural non-farm sector represents the agent of positive change for the poor in the rural economy, rather than income earned from the traditional agricultural sector.

The indirect impact of non farm activities on poverty was addressed by Lanjauw (2002), who focused on an important link between the non-farm sector and rural poverty that occurs via the effect of the non-farm sector on agricultural wage rates. Agricultural labourers are highly represented among the poor in rural areas, and as a

result increases in agricultural wage labour earnings are strongly associated with lower poverty. Lanjouw (2000) maintains that the opportunity to earn non-farm income can lead to higher average agricultural incomes in two ways. First, if there are several production technologies or crops, with higher average productivity being associated with greater variability in output, then having an alternative source of income which does not fall with a bad agricultural outcome makes farmers more willing to choose the high risk/high return options. (A similar rationale is posited to explain why larger, wealthier farmers are often observed to be the first to adopt new agricultural technologies.) Furthermore, in the absence of low cost credit, additional income from outside farming facilitates the purchase of costly inputs when they are required to take advantage of high return options.

9.2 Current Situation of Rural Egypt

Since the mid-1990's, Egypt has benefited from a relatively strong growth, averaging more than 3% a year per capita. As a result, poverty headcount went down from 20% to less than 17%, between 1995 and 2000 and rose again to 19.6 in 2005. However, these global results cover some important spatial heterogeneity. In particular, rural Upper Egypt (UE) experienced increases in over the period, with 39 percent of people living under the poverty line, and another 16.7 percent in rural Lower Egypt. The 2004 Human Development Report confirms that Upper Egypt governorates are consistently at the bottom of the Human Development Indicator scale.

Rural areas in Egypt are characterized by higher fertility rates, larger households, higher illiteracy rates especially female illiteracy rates, and lower school enrollment rates. Arable land is limited and in 2000 the average person per cultivated area was 8.4 persons per feddan. The average land holding per owner is 3.4 feddans, with smaller land holding in Upper Egypt than in Lower Egypt (2.4 feddans versus 4.1 feddans). Data from the recent Household Income, Expenditure and Consumption Survey (HIECS),2005 reveals that 40 percent of total income in rural areas is derived from agriculture activities; the corresponding figures of Lower and Upper Egypt are 37.1 percent and 44.7 percent, respectively. 29 percent of Egyptian labour force, work in agriculture, and 43 percent of labour force in Rural Egypt work in agriculture, (41.4 percent in Lower Rural region and 44.4 percent in Upper Rural region).

Most of the poor live in Rural Egypt, specially Upper Egypt. It has been argued that this was the result of a regionally biased pattern of growth during the late 1990s. Growth was driven in equal measure by industry (especially import-substituting manufacturing) and services. Financial services and tourism drove the growth in the service sector. Agriculture grew modestly but steadily over the period. It saw annual growth rates hovering around 3 to 3.5 percent. Although this represented a small increase relative to the early 1990s, the agricultural sector lagged behind the rapid growth of the industrial and services sector and contributed only half a percentage point to GDP growth. Agriculture showed a regional disparities in growth, with

incomes growing and poverty being lowered in Lower Rural Egypt, while the reverse held in Upper Rural Egypt. This may partly be due to the differing productivity and crop-patterns between the two distinct geographical regions – with Upper Egypt losing production shares in fast growing and high value crops between 1995-1999 (WB 2002).

Overall, rural Upper Egypt development is not only lagging behind, but the present trends are unfavourable. The GOE is aware of the situation and is keen to focus its attention to the development problems and constraints faced by rural UE, as evidenced by the increase in public investments earmarked for that region in the Fifth five-year plan.

9.2.1 Farm versus non-farm employment

In Egypt, agriculture is important for the rural poorest, the landless and for women. In rural Egypt, agriculture and agriculture-related activities constitute the backbone of the rural economy. These activities are particularly critical for both income and employment of the poorest segments of the population, the landless and women who, in large part because of lack of education, have limited access to non farm activities. The development of agriculture can have important effects on the other sectors through direct and indirect linkages. SMEs in particular may benefit from a boost in agriculture-related activities and multiplier effects, which in turn would have a further effect on agricultural income.

More than half of the employed rural population is engaged in agricultural activities (58 percent). When employment status is disaggregated into wage workers, self employed and unpaid workers, different pattern of employment categories are observed. Farm self employment represent half of employment in agriculture. Unpaid workers in agriculture comprises more than a third of employed persons in agriculture (34%), while only 13.7% of employed persons in agriculture are waged workers. On the other hand, waged workers are the most important category for non-farm employment, representing three quarters of employed persons in non-agricultural activities (78%); self-employed persons represent a smaller share, of about than 19% (see table 9.1).

Farm employment is more important in Upper Egypt, where about two thirds of employed persons are engaged in agricultural activities. However, It is less important in Lower Egypt. When employment is further disaggregated into waged workers, self-employed and unpaid workers, differences between regions become more apparent. About 35 percent of employed persons are non-farm waged workers in Lower Egypt, and the corresponding figures for Upper Egypt are lower by 7 percentage points. Unpaid agricultural workers or self-employed in agriculture represent larger proportions in Upper Egypt compared to Lower Egypt. It seems that wealthier region exhibited a larger share of non farm employed persons, especially wage workers; whilst unpaid agricultural workers or self-employed in agriculture are more common in poor regions (Table 9.1).

The non-poor are relatively more likely to be employed in non-agricultural activities than the poor. While only 36% of the working population employed in non-agricultural activities is from the lowest quintile, half of the working population from the richest quintile are active in this sector (Table 9.1) and 80 percent of these are waged workers. On the other hand, 19.7 percent of employed persons in the first quintile are unpaid workers in agriculture and 27% are self-employed in agriculture. This would be consistent with the notion (although not sufficient to demonstrate) that non-agricultural employment offers a route out of poverty.

Table 9.1 Distribution of working persons by working status, quintiles and location, 2005

	1 quintile	2 quintile	3 quintile	4 quintile	5 quintile	All Egypt
Lower Egypt						
Wage worker in agriculture	15.00	10.80	7.41	5.72	3.35	7.03
Self employed in agriculture	25.33	26.53	28.84	30.19	31.63	29.29
Unpaid worker in agriculture	22.64	22.11	21.47	17.83	13.15	18.43
Wage worker not in agriculture	30.01	32.84	34.48	36.63	39.88	35.89
Self employed not in agriculture	6.27	6.70	6.90	8.19	10.71	8.20
Unpaid worker not in agriculture	0.75	1.02	0.91	1.44	1.28	1.15
Total	100	100	100	100	100	100
Upper Egypt						
Wage worker in agriculture	16.49	10.42	6.50	4.51	3.39	9.09
Self employed in agriculture	28.90	30.96	31.95	32.57	34.14	31.42
Unpaid worker in agriculture	18.47	22.30	25.65	24.49	19.96	21.86
Wage worker not in agriculture	27.39	27.33	27.15	29.48	32.07	28.50
Self employed not in agriculture	7.62	7.92	7.44	8.08	9.15	8.00
Unpaid worker not in agriculture	1.13	1.08	1.31	0.87	1.29	1.13
Total	100	100	100	100	100	100
All Egypt						
Wage worker in agriculture	16.24	10.67	7.07	5.32	3.37	7.94
Self employed in agriculture	27.92	28.71	29.96	30.92	32.14	30.13
Unpaid worker in agriculture	19.66	22.27	22.99	20.08	15.16	19.85
Wage worker not in agriculture	28.03	30.03	31.83	34.30	37.80	32.84
Self employed not in agriculture	7.14	7.28	7.08	8.14	10.23	8.10
Unpaid worker not in agriculture	1.00	1.04	1.07	1.25	1.29	1.15
Total	100	100	100	100	100	100

The importance of farm employment for women can be seen in Table 9.2. Nearly 83% of all rural women in the labour force are engaged in the agricultural sector, compared to 43% of men. If we further disaggregate these figures into waged workers, self employed and unpaid workers, we see that 36% of employed women are unpaid workers in agriculture; 45% are self employed and only 2.5% are agricultural wage earners. The corresponding figures for males are 11%, 22% and 11%, respectively.

Educational attainment seems to be an important determinant of employment whether in the farm or non-farm sectors. About 80% of all illiterate employed are engaged in agricultural activities, of these 55% are self-employed, 33% are unpaid workers and 12% are agricultural waged workers. On the other hand, only 12% of

university degree holders are active in the agriculture sector. The employed population with higher education levels is more likely to be engaged in non-farm activities, particularly as waged workers. It is interesting to note that employed persons with secondary level of education or less, are more likely to be entrepreneurs in non farm activities, comprising 92% of all self employed in non farm activities. This may partially due to the fact that new entrants with secondary education may pursue self-employment as a survival strategy as the labour market situation prevents them from engaging in wage employment. We conclude that educated workers have a very low likelihood of establishing their own businesses as independent workers outside agriculture or even working as unpaid workers in their own families' enterprises.

Table 9.2 Distribution of working persons by working status, sex and location, 2005

	Males	Females	All
Urban			
Wage worker in agriculture	9.28	3.26	7.03
Self employed in agriculture	19.80	45.18	29.29
Unpaid worker in agriculture	10.39	31.89	18.43
Wage worker not in agriculture	48.29	15.14	35.89
Self employed not in agriculture	10.95	3.59	8.20
Unpaid worker not in agriculture	1.28	0.94	1.15
Total	100	100	100
Rural			
Wage worker in agriculture	13.38	1.39	9.09
Self employed in agriculture	24.25	44.29	31.42
Unpaid worker in agriculture	10.69	41.91	21.86
Wage worker not in agriculture	40.25	7.38	28.49
Self employed not in agriculture	10.27	3.92	7.99
Unpaid worker not in agriculture	1.16	1.11	1.14
Total	100	100	100
All Egypt			
Wage worker in agriculture	11.10	2.49	7.94
Self employed in agriculture	21.66	44.75	30.13
Unpaid worker in agriculture	10.54	35.93	19.85
Wage worker not in agriculture	44.83	12.10	32.83
Self employed not in agriculture	10.63	3.72	8.10
Unpaid worker not in agriculture	1.23	1.01	1.15
Total	100	100	100

Table 9.3 Distribution of working persons by working status, education status and location, 2005

	Illiterate	Can read and write	Basic Education	Secondary	Below university degree	University degree	Above university
Lower Egypt							
wage worker in agriculture	8.98	6.10	5.92	6.70	2.29	2.04	0.00
self employed in agriculture	45.85	27.39	17.08	17.14	9.14	5.26	0.00
unpaid worker in agriculture	26.25	10.95	14.60	17.03	5.43	4.51	0.00
wage worker not in agriculture	11.64	40.35	50.14	50.76	74.71	79.43	96.43
self employed not in agriculture	6.39	14.43	10.16	6.77	7.43	8.06	3.57
unpaid worker not in agriculture	0.89	0.79	2.10	1.61	1.00	0.70	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Upper Egypt							
wage worker in agriculture	9.87	8.14	9.02	9.51	3.44	2.66	0.00
self employed in agriculture	43.28	26.83	21.30	15.08	7.13	4.32	8.33
unpaid worker in agriculture	26.92	12.43	22.89	17.96	5.41	6.54	0.00
wage worker not in agriculture	11.95	38.34	37.43	47.73	76.66	77.61	83.33
self employed not in agriculture	7.04	13.54	7.63	7.92	6.88	8.09	8.33
unpaid worker not in agriculture	0.94	0.72	1.73	1.81	0.49	0.78	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
All Rural							
wage worker in agriculture	9.45	6.86	7.40	7.74	2.65	2.28	0.00
self employed in agriculture	44.61	27.25	18.68	16.33	8.21	4.88	2.50
unpaid worker in agriculture	26.55	11.47	18.16	17.39	5.30	5.17	0.00
wage worker not in agriculture	11.78	39.54	44.68	49.68	75.90	78.91	92.50
self employed not in agriculture	6.70	14.10	9.10	7.18	7.15	8.02	5.00
unpaid worker not in agriculture	0.91	0.77	1.97	1.68	0.79	0.75	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Casual workers are quite common among agricultural waged workers, representing 50 percent of all agricultural wage workers, and this category represent 11 percent of non agricultural wage workers.

Agricultural and non agricultural employment is also associated with the level of productivity. The distinction between low and high productivity is based on whether earnings respectively fall below, or exceed, the average earnings of someone with agricultural wage labour as a primary occupation. As Table 9.4 indicates, low productivity workers are more prevalent among agricultural wage workers compared to non-agricultural workers. More than half of waged workers in agriculture are engaged in low productivity jobs while about quarter of non-agricultural waged worker are of low productivity. Moreover, low productivity workers are over represented in the Middle Egypt region and less represented in Lower Egypt. As expected the percentage of individuals in low productivity jobs decreases as we move from the poorest to richest quintile, where differences between the proportion of low productivity jobs in the first and fifth quintile is more than nine percentage points. Salaried workers in agricultural and trade activities have lower productivity jobs than for the sample average.

Table 9.4 Productivity by, employment, location and quintiles

	Low productivity jobs	High productivity jobs	Total	Low productivity jobs	High productivity jobs	Total
	Row %			Column %		
Region						
Lower Egypt	70.56	29.44	100	54.61	61.85	56.56
Middle Egypt	77.60	22.40	100	25.95	20.33	24.44
Upper Egypt	74.76	25.24	100	19.44	17.81	19.00
Total	73.08	26.92	100	100	100	100
Quintiles						
First Quintile	77.66	22.34	100	18.48	14.38	17.38
Second Quintile	74.48	25.52	100	19.66	18.21	19.27
Third Quintile	73.86	26.14	100	19.92	19.07	19.69
Forth quintile	71.99	28.01	100	20.54	21.62	20.83
Fifth Quintile	68.41	31.59	100	21.40	26.72	22.83
Total	73.01	26.99	100	100	100	100
Employment						
Wage worker in agriculture	55.27	44.73	100	33.78	13.81	20.51
Wage worker in non agriculture	27.95	72.05	100	66.22	86.19	79.49
Total	33.56	66.44	100	100	100	100

9.2.2 Income Sources

Non-farm income from either wages or self-employment, in rural Egypt contributed, on average, about 47 percent of total income (Table 9.5). This compared to about 40 percent from agricultural wages and self-employment and 13 percent of other

income sources such as rent and transfers. It is clear that non-farm sector is an important source of income, even at this highly aggregated national level. Examining the contribution of farm/ non-farm sources to total income across different per capita expenditure quintiles indicates that agricultural income is more important than non agricultural income for the lowest two quintiles, where the contribution from agricultural sources is nearly half of total income. The share of agricultural income, for the highest quintile, is lower than the level of the poorest two quintiles by 13 percentage points. Taking all non-farm incomes sources together, the evidence in Table 9.5 suggests that the importance of non-farm income is also unevenly spread across quintiles. The share of non farm in sources of income to total income increases as per capita income increases, where the share for the highest quintile is higher by about 7 percentage points compared to the lowest quintile. The importance of non-agricultural income as a route out of poverty is again suggested by the observation that across quintiles, the share of total income from non-agricultural sources rises sharply with living standards.

When we further disaggregate farm and non farm income into wages and self employment income, the picture becomes clearer. Farm income from self employment are clearly the most important source of income, accounting for 34.6 percent of total income in the sample. The share of non-farm wage income is slightly lower than farm self employed shares, (representing 33.9 percent of total income), and the contribution of non farm income from self employed is well below these shares.

As there are large differences in human capital assets (education and skills) between the different quintiles, it is not surprising that there is a large discrepancy between labour incomes of the poor and the non-poor. Farm income from self employment are the main source of income, accounting for 33.06 percent of the total income of individuals in the first quintile, while the corresponding figure for the richest quintile is 31.23 percent. Non-farm wage income is equality important source of income of the poorest quintile, accounting for 33.61 percent of their total income. It is worth mentioning that income from agricultural wage contributes by more than 13.75 percent of total income for the poorest quintile, while its share in total income of the richest quintile is as small as 2.01 percent. Moreover, although non-farm income from self-employment is always ranked the third most important source of income, its relative importance with respect to the richest quintile is more pronounced.

Table 9.5 Income shares by quintiles and location

Quintiles	Wages in agriculture	Wages in non agriculture	Self employment income in agriculture	Self employment income in non agriculture
Urban				
1	12.99	38.25	32.77	9.10
2	9.37	38.61	34.17	10.06
3	6.17	38.51	35.54	10.81
4	4.42	37.35	33.70	13.64
5	2.07	33.26	28.39	16.83
Total	4.87	36.17	32.18	13.68
Rural				
1	13.69	32.05	32.94	11.07
2	8.09	30.18	38.92	12.52
3	5.05	29.26	43.12	11.02
4	3.33	31.07	40.93	11.54
5	1.84	29.24	37.80	13.24
Total	6.12	30.30	38.57	11.99
All Egypt				
1	13.75	33.61	33.06	10.37
2	8.79	34.17	36.73	11.27
3	5.73	34.99	38.46	10.92
4	4.04	35.24	36.16	12.99
5	2.01	32.36	31.26	15.95
Total	5.40	33.87	34.64	13.10

9.2.3 Farm and Non Farm Employment and Income Links

Because of its forward and backward linkages, agriculture growth has important spillover effects on the rest of the economy. In addition, because of the large number of people it employs, a more productive and income-generating agricultural sector has an impact on other sources of income. This is further evidenced through an analysis of HIECS 1999/2000 data using the Sen Welfare index, which shows how welfare responds to an exogenous change in income from various sources, (El Laithy 2005).

The income effect of agricultural growth, outside agriculture, is explained as follows:
A direct effect-an increase in demand for goods and services necessary to produce, transport, process, and sell more agricultural products. These functions are usually provided by urban-based agro-industries, as well as SMEs, that cater to farmers by selling farm inputs, tools and machinery; providing repair services; and collecting, transporting, packaging, processing, and selling outputs.

An indirect effect-as farmers' incomes increase from increased agricultural outputs and sales, they spend a large share o f their income on locally produced goods and

services. Here again, SMEs that provide construction and brick making, tailoring, household repair services, transportation, and various trading activities are likely to be stimulated.

Both the direct and indirect effects result in a boost to the off-farm sub-sector. Trade and construction activities are likely to benefit the most. These activities are very important for the poor, as they employ a large number of casual and unskilled jobs.

The expansion of the off-farm sub-sector can have a further impact on agricultural incomes in two ways: (i) directly, it creates alternative job opportunities for unpaid or poorly paid workers in agriculture, thus exerting an upward push on agricultural wages; (ii) indirectly, it can raise agricultural productivity, by virtue of the fact that many farmers (23 percent across all quintiles) earn part o f their income from off-farm private activities. Expansion of the off-farm sub-sector can raise agricultural productivity in two ways. First, if there are several production technologies or crops, with higher average productivity being associated with greater variability in output, having an alternative secure source o f income may make farmers more willing to choose the options that involve higher risk and higher return. (Wealthier farmers are often the first to adopt new agricultural technologies). Second, in the absence of low-cost credit, additional income from outside farming facilitates the purchase of costly inputs.

9.2.4 Trends in Employment

Based on the most recent Egypt Labour Market Panel Survey (ELMPS), market labour force in Egypt grew from 17.2 million on 1998 to 23.3 million in 2006, at a rate of 4.1% per annum (p.a.). These rates of growth exceed the rates of growth of the working age population (which has grown at 2.7% p.a.) , indicating the average labour force participation rate has gone up during the period. The highest growth rate was for female agriculture work, which has grown at the unrealistically high average annual rate of 20% p.a. Assaad (2007) believed that these may be exaggerated figures due to improved measurement of women's home-based market activities in ELMPS 06.

Overall participation rates in the market labour force increased by about 4 percentage points from 47.2 percent to 51.1 percent, during the period of 1998-2006. This reflects increases in participation for both males and females of about the same magnitudes, although the relative increase for females is clearly larger. For men, the increase in participation is similar across urban and rural areas, although starting from a higher base in rural areas. Rural women, in contrast, started from a lower base of market labour force participation than their urban counterpart but experienced a more rapid increase over time. Moreover, overall labour force participation rates based on the extended definition also increased significantly from 1998 to 2006, but the increase is limited to males.

A sharper decline in unemployment than urban areas, and most surprisingly the decline is greatest in rural Upper Egypt. According to the standard definition of unemployment and the market definition of economic activity, the unemployment rate in Egypt declined from 11.7% in 1998 to 8.3% in 2006.

The decline in unemployment was proportionally greater in rural areas, which went from 12.2% to 7%, as compared to 11% to 10% in urban areas. Both men and women in rural areas experienced a near halving of their unemployment rates.

Again, as expected, the lowest wages are in the rural regions, with rural Upper Egypt being the lowest of all in both 1998 and 2006. However, the increase in real earnings in the two rural regions was more pronounced than in the urban regions. This confirms the relatively stronger improvement in rural labour markets noted the examination of data on unemployment. Rural regions, especially rural Upper Egypt, were the ones to suffer the sharpest declines in the 1988-1998 period.

Women, on average, witnessed a slightly slower growth in their earnings in the 1998-2006 period compared to men, but the gender wage ratio (male/female) declined in agriculture, trade, and transport, but increased in financial and business services and in manufacturing, two sectors, which hire women disproportionately. The gender wage gap also increased in public enterprises and in formal private sector employment, but declined among irregular wage workers.

9.3 Actors for Enhancing Economy of Rural Egypt

9.3.1 Access to Credit

Formal credit (through banking institutions including the Principal Bank for Development and Agricultural Credit (PBDAC) requires land ownership as collateral. Farmers who do not have registered title to their land cannot obtain the low cost (7 per cent) loans available from PBDAC. In addition, loan amounts are restricted: for example the maximum loan amount for a feddan of potato is LE 2995 while the input costs are closer to LE 4 500. Obtaining inputs through cooperatives also requires land titles. Rural credit is often informal. Rich farmers usually extend loans to poorer landowners and tenants in exchange for part of their output.

Credit to a larger number and broader range of farmers in Rural Egypt can be channeled through existing public sector banks, in particular the PBDAC, but PBDAC will need to complete its on-going reform process. The challenge is to determine how best to use the PBDAC to meet the needs of Upper Egypt farmers. Private sector banks with supporting credit guarantee arrangements and financial intermediaries are another alternative. The European Union is financing a successful line of credit to small farmers through CIB (the CIB-ASD Program), but it is a still a limited experiment. Micro-finance institutions do not represent a suitable alternative given their high rates and specific reimbursement requirements that do not fit the agricultural cycle except for commercial operations such as livestock fattening.

Finally, contract farming between small producers and large producers, agro-processing industries and exporters often entail the provision of inputs on credit (to be repaid against output sale) but usually with a sizeable markup. Uninformed and isolated farmers are in a disadvantaged position to negotiate a contract that includes transparent and faire prices.

9.3.2 SMEs Sector

SMEs are traditionally thought of as well poised to respond to increased demand by creating jobs. Their base employment is very large, they are highly labour-intensive, and they depend on their localities for labour and other inputs. Furthermore, they have low capital requirements and offer some opportunities for female employment and entrepreneurship. However, the potential for rural SMEs to generate employment through expansion must be qualified. First, SMEs are not a homogeneous sector. Second, high labour intensity is not synonymous with the ability to generate employment through expansion. To the contrary, the group of SMEs that had the highest ability to generate employment was the least labour-intensive, and had the highest average annual capital growth rate. Third, again, when it comes to the ability to generate labour by expansion, urban enterprises fared better than rural ones. Fourth, the services sector, which had the highest ability to generate employment (and also the highest average annual growth rate in capital), was the least likely to suffer from demand constraints.

This points to the importance of demand and economic growth for job creation. Continuing to provide supply side solutions to SME problems–though admittedly needed–without expanding the market for their products and services is highly unlikely to generate employment through expansion. Suffering from high underemployment rates–primarily, due to the lack of sufficient demand to keep them fully employed–these enterprises, will not generate additional jobs, except after their capacity has been fully utilized. In the meantime, however, increased demand will cause SME owners to work harder and earn more income.

From a 2000/1 survey, SMEs face four key constraints: as follows: (i) low demand; (ii) capital/liquidity ; (iii) high tax rates; and (iv) legal and regulatory constraints. The development of SMEs is constrained by a heavy handed bureaucracy. To start an SME in Egypt, it takes between 13 and 91 administrative steps, representing between 52 and 232 days of work . On the other hand, to declare bankruptcy, 53 steps are required, involving 41 entities, for up to 635 days. Both at entry and exit, bribes require an additional 50% of the administrative costs. Other studies estimate that Egyptian entrepreneurs spend close to 35% of their time solving problems related to government regulations.

Thus, important improvements can be obtained through enhanced flexibility and facilitation of the administrative process, especially for SMEs. Red tape tends to impact more negatively on SMEs, since they lack the human and material resources to deal with bureaucratic procedures.

The GoE recently simplified the administrative procedures with the law no 141/2004 for small enterprises, notably with regard to the cumbersome licensing and registration procedures. Under the new law, the Social Fund for Development (SFD) is to establish One Stop Shops for the licensing and registration of SMEs in various governorates. Under the new law, a temporary license may be issued immediately to entrepreneurs upon submitting the required documents. Within 30 days, the SFD should provide the entrepreneur with a final license.

9.3.3 Role of farmer organizations

Constraints facing farm and non farm activities, are overwhelming for farmers with small and extra-small holdings. In particular, they have no leverage, whatsoever in negotiating contracts with buyers, nor can they acquire the minimum equipment for post-harvest sorting, grading packaging and cooling, or access private services and information. There are two options that can be pursued, both with public sector support, so that small farmers can meet the challenges and take advantage of the opportunities offered by new markets (international and domestic): farmer organizations and/or contract farming with larger producing entities. Cooperatives and associations offer two options to farmers to get organized.

Agricultural Cooperatives

Agricultural cooperatives are widespread (6000 cooperatives with 4.2 million members). The GOE established them in the 1960's as instruments of the command economy and to distribute subsidized agricultural inputs. They are managed and staffed mainly by seconded civil servants. Though agriculture is less subsidized nowadays, agricultural cooperatives have kept their role in input distribution. Other services (like marketing of agricultural produce or extension services) are sometimes provided but on a more limited scale. Most farmers still considered them as state agencies. As a result there is limited ownership among members, and their performance is mixed. The cooperatives' existing six-layer structure (primary - district - central - general cooperatives - Central Agricultural Cooperative Union - the General Cooperative Union) is rather ineffective.

As far as delivering inputs, the Principal Bank for Development and Agricultural Credit (PBDAC) competes with the cooperatives. The MALR, as the owner of PBDAC, follows an ambiguous policy in supporting this organization, often in violation of its own cooperative reform strategy. PBDAC receives preferential quotas of inputs in short supply (e.g. fertilizer) and its distribution network is highly subsidized. This creates an unfair environment for cooperatives to develop.

A comprehensive restructuring process began recently to modernize agricultural cooperative societies and make them an "economic enterprise with a social return, based on optional membership and international cooperative principles, working in a market economy, representing the interest of their members, within a legal framework which protects their capital, and enables the cooperatives to manage their financial resources as private enterprise…." The first steps to implement the reform

strategy have so far been limited to a few pilot cooperatives at village, markaz and governorate levels. Once the results of these pilot efforts are available there will be an opportunity to make more comprehensive efforts to reach a large section of cooperatives, make them member-controlled, efficient and sustainable.

Farmers associations (FAs)

By contrast, FAs are few in numbers (less than 100) and fairly recent: the oldest have less than five years of existence. They have been promoted mainly with in the context of donor funded projects (USAID AERI project) or by NGOs (CARE EL-SHAMS project and CEOSS). FAs are concerned mainly with providing their members with the services they need to better market their products. Some FAs also play an advocacy function. For example, some FAs in collabouration with governorate level authorities, made recommendations to use locally available inputs to reduce production costs in the production of animal feed. FAs have also been advocating the enhancement of product quality, through organic or safe farming and improved environmental practices. In some cases, such practices, along with NGO support have enabled their members to gain access to international markets.

9.4 Enhancing Employment and Income in Rural Egypt: An Integrated Approach

Several measures may be recommended for enhancing growth of agriculture sector; enhancing investments to produce and market high-value crops and livestock products that requires substantial investments in physical and human capital. This entails the following measures:

1) Enhanced investments in transportation, cooling and packing facilities. Roads in Egypt are of low quality and lack sufficient maintenance. It is estimated that operating costs for trucks are 30-50% higher in Egypt than in countries such as Lebanon and Jordan. UE is no exception. However, because of its remoteness, this problem takes an especially important dimension. In addition, UE is lacking a functional fleet of refrigerated trucks. The proposed construction of a cooling facility at the Luxor airport would enable farmers to access export markets, but the local transport in good conditions would remain a problem. Overall there is a need for investments in transport and road facilities. Other productive facilities such packing houses, cooling equipment and processing industries are lacking.

2) Enhanced access to credit for horticulture and livestock related activities. Poorer entrepreneurs experience difficulties in accessing formal; credit schemes. Lack of access to credit and insurance prevents farmers to engage in higher risks / higher returns activities. One way to enhance credit access is to provide credit to a larger number and broader range of farmers in Rural Egypt through existing public sector banks. Another is to develop guarantee arrangements to achieve the same through private sector banks. In kind credit could be developed though promoting contract farming between small scale producers and large scale producers/exporters.

3) Enhanced market access for input and output. Access to inputs and commercialization of output in rural Egypt is often controlled by a handful of actors, either public or private, which results in rent situation and inefficiencies. Interventions in this domain may include support to systems to disseminate market information on prices, required characteristics, quantities and timing. On the supply side, policy interventions should aim at enhancing the efficiency of government actors and regulating the wholesalers' activities. In particular, Egypt will need to make fundamental changes in its cooperative policy and legislation to become compatible with the requirements of a market economy. Input/output access could be enhanced though promoting contract farming between small scale producers and large scale producers/exporters, which for small-scale farmers would, at the same time, solve the thorny issue of accessing credit.

4) Improved training and technical advice. Despite the presence of faculties of agriculture and research centers in the region, as well as government extension services, farmers lack appropriate technical advice regarding non-traditional crops and animal husbandry. Interventions could include technical advice and capacity-building of farmer associations, as they can reach a large number of farmers. Information on quality requirements, both generic and specific will be crucial for farmers to reach the exporter markets.

5) Supporting SMEs. In general, Rural areas, particularly in Upper Egypt does not have a network of agriculture-related SMEs that would be needed to support the development of horticulture and animal products supply chain. SMEs development have been facing a number of constraints, not the least one being government cumbersome regulations. Under the new law, the Social Fund for Development (SFD) will establish One Stop Shops (OSS) for the licensing and registration of SMEs in various governorates. The SFD will identify investment opportunities, prepare feasibility studies, advice entrepreneurs on the risks they might face, assist them in obtaining input and machinery, provide loans, guarantee the loans it provides, advice entrepreneurs on production methods, accounting and finance, assist in marketing, and provide opportunities for accessing government contracts, among other things.

However, enhanced public investments in services and basic infrastructures in rural areas are prerequisites. There are several initiatives in this respect; The Shorouk Program, The public work Program of the Social Fund for Development, SFD and the emergency plan.

9.4.1 Expected Trends

Egypt has recently applied several reform policies that resulted in significant economic progress during the last few years. In order to maintain this progress in the future, more comprehensive social programs are highly needed. In this context, the Sixth five-year plan (2007-2012) includes an integrated rural development program

(MISR for Rural Development) that is aimed to alleviate poverty in 1500 villages in seven Upper-Egypt governorates, namely Menya, Qena, Beni Suif, Fayoum, Assiut, Sohag, and Luxor. The Sixth five-year plan (2007-2012) aimed at achieving GDP growth by 8 percent per annum, which will be reflected on employment status and income of Egyptian at large. It is estimated that achieving this level of GDP growth, 750 thousands job opportunities will be generated every year and hence unemployment rate will decline. It is estimated also that by 2012, GDP per capita will be 13 thousand pounds per year. If the above integrated is going to be followed, rural residence we get the most gain.

9.5 SWOT analyses income support

During the workshop the discussion group on employment, income and marketing discussed their ideas on whether income support would be a feasible policy instrument to make the Old Lands dynamic rural areas. The results of the discussion were arranged in a SWOT analyses.

Strengths	**Weaknesses**
• Direct Impact on income • Increase Productivity • Better Targeting • Use Existing Rural Organizations	• Financial Viability • Rural Organization are Weak • No Social Vision • No Democracy in Rural Organization
Opportunities	**Threats**
• Enhance Marketing & Income Generating Activity • Democratization of Rural Organization • Human Capital Accumulation • Strengthening Rural Organization	• Illiteracy • Limited Funds • Legislation • Bad Past Experience with Rural Organization & No Community Participation

Introducing “Income Support” as an instrument to promote sustainable income and employment generating activities in the conventional old lands is being investigated within the context of an integrated vision.

In the long-term, with rising input costs, especially the value of the land and water cost to reflect its scarcity, it would be very difficult for Egypt specially for Upper Egypt to continue to grow low value crops that do not maximize net returns per unit of land and water. Non traditional crops and livestock products for which there is a growing demand both internationally and domestically maximize such returns and are probably the best solution to increase farm income in a situation of micro farm sizes and over abundant labour force. Although they require complex technologies, non-traditional crops are in favour of the small producers: they are labour intensive, and provide high returns to labour and land. Livestock raising in particular is key to increase the income of extra small landholdings as farmers can expand this activity without additional land. The above points towards a development that would be based on the production, processing and marketing, both domestically and internationally, of non traditional crops and livestock products, in addition to focusing on gaining efficiency for those traditional crops for which Upper Egypt, has a comparative advantage.

A potential scheme in support of small holders is to provide income support to farmers' organizations, which may help small landholders to: 1) use locally available inputs and hence reduce production costs in the production of animal feed. 2) advocate the enhancement of product quality, through organic or safe farming and improved environmental practices; 3) enable smallholders to enter high-value markets and to gain access to international markets.

Agricultural cooperatives are widespread (6000 cooperatives with 4.2 million members). The GOE established them in the 1960's as instruments of the command economy and to distribute subsidized agricultural inputs. They are managed and staffed mainly by seconded civil servants. Though agriculture is less subsidized nowadays, agricultural cooperatives have kept their role in input distribution. Other services (like marketing of agricultural produce or extension services) are sometimes provided but on a more limited scale. Most farmers are still considering them as state agencies. As a result there is limited ownership among members, and their performance is mixed. The cooperatives' existing six-layer structure (primary - district - central - general cooperatives - Central Agricultural Cooperative Union - the General Cooperative Union) is rather ineffective. By contrast, Farmers associations (Fas) are few in numbers (less than 100) and fairly recent: the oldest have less than five years of existence. They have been promoted mainly with in the context of donor funded projects (USAID AERI project) or by NGOs (CARE EL-SHAMS project and CEOSS). FAs are concerned mainly with providing their members with the services they need to better market their products.

9.5.1 Strengths

- Establishing unions responsible on studying the agricultural cooperation between Egypt and foreign countries in the field of modern technologies which will reflect positively on the local producers.
- Identifying marketing strategies.
- Make analytical study for cost and profit in whole or retail sales.
- Abiding by the roles of good agricultural practices in all product stages to guarantee good quality and competitive product among the global markets.
- Improving the agricultural research to overcome any sudden disease.

9.5.2 Weaknesses

- Non-efficient use of financial and service resources.
- No care for educational level.
- No care for hygienic awareness.
- No care for environmental awareness.
- Difficulty in convincing the farmers about the modern agricultural technologies.
- Lack of technical trained labour.
- Increase in local income which is spent on prices increase.
- Lack of marketing abilities especially in areas that has no access to export markets.

9.5.3 Opportunities

Through public-private partnerships, some dynamism could be instilled in these services. Such partnerships could bring together processors or exporters, farmer associations, extension agents and researchers around the promotion of a value chain or sub sector. Mass media and demonstration farms are also important to disseminate information about potential new products, good agricultural practices and required inputs and processing techniques. Various private service providers along the value chain will also be key to pass information on to farmers.

Income support can help small and micro enterprises/service providers that are essential for the development of the value chain in the horticulture and livestock sector. In turn, they need a thriving agricultural sector for their development. Well informed service providers will be needed in the following areas:

- Input supply (quality and certified seeds, dedicated pesticides, drip irrigation equipment, animal feed).
- Veterinary services and supply including artificial insemination.
- Greenhouse seedling production.
- Market brokerage and intelligence.
- Small laboratory testing services (soil, leaf tissue analysis, pH, water quality to determine fertilizer amendments as well as pesticide residue testing).
- Advisory services (for a whole range of advice to farmers: input use, soil and water management, including the value of drip irrigation systems, quality requirements, traceability, and post harvest handling).
- Cold chain equipment renting (portable cooling equipment, small refrigerated trucks).
- Farm equipment renting.
- Packing houses.
- Milk collection and processing.
- Computer and internet services, equipment and vehicle maintenance and repair.
- Business services, in particular in the area of technical management and financial management.
- Reduce gas, fertilizers and electricity prices.
- Securing agricultural products marketing for small scale producers.
- Technical assistance would help in building the institutional, technical and marketing abilities for small farmers; also, unifying their efforts and creation of mutual benefits between farmers and their associations. In addition it will achieve sustainable increase in export volumes which will reflect on local sales, income and employment opportunities.
- Providing agricultural machines that can work in the small scale areas.
- Providing training for small farmers.

9.5.4 Threats

- Public extension services are not very effective, due to well-known constraints, including the low motivation of extension agents, their lack of accountability to producers, their limited operating means and low and outdated level of expertise (one out four extension agent holds a BsC degree). In addition, the number of well trained extensionists in new areas such as non traditional crops is very limited.
- Poor transportation conditions result in high costs, fresh product waste and loss of quality.
- Inadequate post harvest handling practices, lack of cooling and processing facilities also severely damages produce quality.
- The immigration from the country side to the city.

10 Synthesis and conclusions:

Road map towards a policy for a dynamic rural area in Egypt

The objective of this road map is to describe the steps towards a policy for a sustainable dynamic rural area of Egypt. Within this policy targeted conditional income support is suggested as a measure to preserve socio-cultural values, bio-diversity, and general character of the old lands to Egyptian small holders in the Old lands of Egypt (Delta, Valley and The Fayoum), alleviate poverty and to improve agricultural production both in quantity and quality.

10.1 Current situation

The current small-scale agriculture in the Old lands is marginal compared to the agriculture in the "new lands", due to scale and applied technology. However, the traditional agriculture in the Old lands is performing quite well under the existing limitations of: small holdings, labour intensive methods, traditional irrigation water application, etc, resulting in three harvests a year. The 'Old Lands' as agricultural area will remain economically marginal as long as land prices outweigh the values of its return. Even in the most optimistic scenario only 10% of agricultural production in the Old lands will be suitable for export. At the moment 80% of the farmers own a holding of less than 5 fedan.

10.2 Situation in 2025 "business as usual"

The Egyptian population is growing fast and will reach 95 million inhabitants in 2025, an increase of 22 million in the coming 18 years. As farming is marginal, land sales for real estate development will continue to be more profitable than farming. Urban spread will continue even with a law against building on agricultural lands in place. With 22 million extra mouths to feed and less agricultural land available Egypt will face self sufficiency problems with respect to food. Another threat to agricultural production of the Old lands is farm size. In 2025 farm sizes will have shrunk even more and about 80% of the farmers will have a holding of less than 3 fedan. Upscaling measures to create bigger farm sizes is not realistic because of high land prices. Land abandonment will result in high unemployment rates, since a reduction of 10% of the farmers means at least a million extra people unemployed. Urbanization as well as measures to increasing farm size will have a great impact on biodiversity and the social cultural values of the old lands, which have been in place for thousands of years.

Water is life and water is scarce. Agriculture is the biggest consumer of water, but it comes third in allocation priority after domestic and industrial water needs. So with growing domestic and industrial needs and additional new lands that need irrigation water, the need for rationalizing water for the Old lands will be inevitable.

In conclusion, the main problems for the Old lands occurring in 2025 with business as usual:

- Urban pressure
- Pressure on self sufficiency
- Pressure on water quantity and quality
- Reduction of biodiversity
- Unemployment of former farmers
- Uncertain productivity and product quality

10.3 Situation in 2025 with a policy towards rural dynamic areas

Targeted conditional income support has been applied successfully over the past 30 years in Europe. In every country the policy has been specified towards the local needs and objectives. This could also be an approach in Egypt. For Egypt this will mean in general terms that the existing subsidy programs (on input) could be converted towards an targeted conditional income policy. By making use of cross compliancy, local objectives and conditions can be formulated that will protect local needs such as biodiversity and social cultural values and will promote good farming practices. By making marginal farming sustainable as a result of this income support policy farming can remain a viable option in the livelihood strategies of the rural population. Rural development policy in the EU has developed over the past thirty years into a consistent and coherent framework. One of the key elements in this framework is the instrument of conditional income support targeted at specific groups. The income support is conditional on the compliance with rules, regulations, and indicators for public objectives. In other words specific farmers are remunerated for providing environmental, socio-cultural services and other public goods.

Teams of key experts in four different fields discussed the issues at hand with respect to sustainable rural development as has been reported in the previous chapters. A number of important conclusions were drawn up:

- The need to make rural areas attractive to prevent extreme urbanization
- The need for widespread adoption good agricultural practices
- The need for wise management of water quality and water quantity. This is important because water is life and water is scarce.
- The need to strengthen rural organizations to combat poverty, enhance rural income generation within and outside agriculture.

The 29th of May 2007 a workshop on the subject of targeted conditional income support as a suitable measure for the Old lands was held in Cairo with policy makers, experts and donor representatives. The main question raised during the workshop was the following: Is targeted conditional income support a suitable policy instrument to enhance sustainable marginal farming in the old lands of Egypt.

The answer to this question was provided after discussions with workshop participants, namely that conditional income support can be a suitable instrument in

providing the extra incentive to address the challenges to rural development mentioned above.

Some similarities with the situation in the EU were noted, namely the emphasis on good agricultural practices and the need to preserve vibrant and viable rural communities. Important differences with the situation in the EU were highlighted as well, namely the need to work through farmers' organizations instead of individual farmers and the emphasis on water quality and quantity instead of environmental issues as a whole.

However, implementation such an instrument is not without risk. A number of common concerns were raised including:

- Will this be a financially sustainable instrument and will it create undesirable new dependencies
- Will the targeting be sufficiently equitable
- Is there sufficient knowledge available at farmer, community and rural organization level in order to comply with the conditions set
- For each objective to be met through conditional income support there are essential preconditions and required services that imply an integrated approach.

The conclusion of the workshop was that targeted conditional income support was considered to be a promising instrument to promote sustainable rural development in the Old lands of Egypt. Although there are still a number of threats and weaknesses to be addressed, the overall feeling was that strengths and opportunities for such a measure outweighed the threats and weaknesses. It was suggested that supplying the farmers with a conditional income, an incentive is provided to economize on water and to apply good agricultural practices. This will not only have a positive effect on the environment, but also on the Egyptian economy and the quality of produce. This effect can be described as the multiplier effect. Last but not least the measure of income support might make farming a more attractive job and that might result in reduction of land abandonment.

Advantages of targeted conditional income policy:

- Proven strategy (EU)
- Cross compliancy with policy objectives
- Multiplier effect
- Specific to local requirements (Fits in with decentralization initiatives)
- Economizing effect on water and other agricultural inputs
- Promotion of good agricultural practices
- Less land abandonment
- Protection of biodiversity and social cultural values
- Contributes to good soil/water management

11 Recommendations

The outcome of the workshop and further meetings with the Egyptian Ministry of Agriculture and Land Reclamation and the EU Delegation resulted into the following recommendations.

1. Formulating a national rural strategy of which targeted conditional income support will be an important instrument.
2. Setting up a pilot for targeted conditional income support

The steps to be taken to formulate a national rural strategy are:

1. Mobilization of resources to prepare the Conference on a national policy for rural development in Egypt (2007)
2. Creating further political support for the concept of targeted conditional income support(2007)
3. Investigate whether the EU framework for rural development policy can be used as a framework for developing an Egyptian national strategy for rural development policy to allow the introduction of new policy instruments(2007)
4. Conference organized by Ministry of Agriculture and Land Reclamation, EU and the Embassy of the Kingdom of The Netherlands on a national policy for rural development in Egypt (November 2007)

The steps to be taken to set up a targeted conditional income support:

1. Mobilization of resources to prepare the implementation of targeted conditional income support (2007)
2. Preparation of the implementation of targeted conditional income support (2008)
    a. definition of necessary institutional arrangements
    b. Set up an organizational model
    c. Define a legal framework
    d. calculation of budgetary implications
    e. Formulate general eligibility criteria
    f. Definition of policy goals and related income support conditions
    g. definition of monitoring and control system
    h. Perform a risk analysis
    i. Perform a macro economic analysis
3. Ex-ante evaluation of possible targeted conditional income support pilot projects (2008)

The recommendations are formulated as next steps to be taken to come to a national rural strategy and consists of two tranches:further actions

References

Bennagen, M.E., Indab, A. Amponin, A., Cruz, R., Folledo, R., van Beukering, P.J.H., Brander, L., Hess, S., van Soesbergen, A, van der Leeuw, K. and de Jong, J. 2006. Designing Payments For Watershed Protection Services Of Philippine Upland Dwellers. Paper presented at the conference "Economics of Poverty, Environment and Natural Resource Use", 17-19 May, 2006. Wageningen International Congress Centre, Wageningen, The Netherlands.

CIFOR 2005. Payments for environmental services: Some nuts and bolts. Info-brief no. 9. Bogor: CIFOR.

FAO. 2004. Payment schemes for environmental services in watersheds. Land and Water Discussion Paper 3. Rome: FAO.

Gutman, P., ed. 2003. From goodwill to payments for environmental services. Washington DC: WWF, Macroeconomics for Sustainable Development Program Office.

Hope, R.A., I.T. Porras, M. Miranda. 2005. Can payments for environmental services contribute to poverty reduction? A livelihoods analysis from Arenal, Costa Rica.

Landell-Mills N., Porras I.T. 2002. Silver bullet or fools'gold? A global review of markets for forest environmental services and their impacts on the poor. Research report by the International Institute for Environment and Development (IIED), London.

Meijerink, G. 2006. Institutional aspects of payment for environmental services (PES) schemes: the role of monitoring. Paper presented at the conference "Economics of Poverty, Environment and Natural Resource Use", 17-19 May, 2006. Wageningen International Congress Centre, Wageningen, The Netherlands.

Pagiola S., Bishop J., Landell-Mills N. 2002. Selling forest environmental services. Market- based mechanisms for conservation and development. Earthscan publications, London.

Rojas, M., and B. Aylward. 2003. What are we learning from experiences with markets for environmental services in Costa Rica? A review and critique of the literature, November, 102.

World Wildlife Fund 2006. Payments for Environmental Services - An equitable approach for reducing poverty and conserving nature, WWF report.

Wunder, S. 2005. Payments for environmental services: Some nuts and bolts. CIFOR occasional paper 42. Bogor: CIFOR.

Appendix 1 Agenda of Workshop

9:30 a.m.	10:00 a.m.	Registration and welcome coffee
10:00 a.m.	10:30 a.m.	Introduction By Dr. Osama Kheir El-Din (Chairman, UPEHC)
10:30 a.m.	10:45 a.m.	Presentation of the Project Policy towards Dynamic Rural Areas in Egypt By Dr. Zohra Merabet (Executive Director, NSCE)
10:45 a.m.	11.00 a.m.	Presentation: 30 Years of Development of Rural Policies/ Income Support in Europe By Dr. Gideon Kruseman (Senior Researcher, University of Wageningen)
11.00 a.m.	11.15 a.m.	Presentation: Current Rural Development Policy in the EU 2007-2013, Tools & Measures By Mr. Alberto Cortezon (Programme Manager for Social and Rurul Micro- Credit)
11.15 a.m.	11.30. a.m.	Presentation of the Vision on Rural Development in Egypt By Dr. Ahlam el Naggar (Under Secretary of State for economic affairs MoALR)
11:30 a.m.	11:45 a.m.	Coffee break
11:45 a.m.	12.05 p.m.	Presentation of the Position Paper on: Policy Reform, Population and Demography By Dr. Mohamed Fetouh Aboul-Atta (Thematic expert)
12.05 p.m.	12:25 p.m.	Presentation of the Position Paper on: Agriculture, Food Production and Land Use By Dr. Hamdy El-Sayed (Thematic expert)
12:25 p.m.	12:45 p.m.	Presentation of the Position Paper on: Water Management, Biodiversity and Environment By Dr. Mohsen El-Arabawy (Thematic expert)
12:45 p.m.	1:05 p.m.	Presentation of the Position Paper on: Employment, Income and Marketing By Dr. Heba El-Laithy (Thematic expert)
1:05 p.m.	1:20 p.m.	Coffee break
1:20 p.m.	2:20 p.m.	SWOT-Analysis Income Support – An Instrument for Sustainable Marginal Farming Discussion groups Facilitators: Thematic experts
2:20 p.m.	3.00 p.m.	Short presentation on each discussion group outcome By the thematic experts
3.00 p.m.	3:30 p.m.	Discussion and Conclusion Dr. Gideon Kruseman and Dr. Wies Vullings
3:30 p.m.	5:00 p.m.	LUNCH

Appendix 2 List of participants of workshop

List of participants attended workshop on Policy Towards Dynamic Rural Areas in Egypt

Tuesday, May 29th, 2007 Marriot Hotel "Aida Ballroom"

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Appendix 3 Press release

Income support in Egypt?

Is income support a suitable policy measure to make the 'Old Lands' of Egypt (Delta, Valley and The Fayoum) dynamic rural areas? This is the central question of a workshop organized by Union of Producers and Exporters of Horticultural Crops (UPEHC) and the office of the Agricultural Councellor of the Embassy of the Kingdom of The Netherlands on May 29 in the Marriot Hotel in Cairo.

Currently, 80% of the landholdings in the Old Lands are smaller than 5 feddan. They are performing quite well with three harvests of high value crops per year, mainly produced for local markets. However, the conditions the farmers work in are harsh. Modernization of the traditional agriculture in the Old Lands through up-scaling of landholdings could improve yields and volume, but would be at the expense of employment and bio-diversity, and would imply loss of social and cultural values. Up-scaling is therefore not a desirable option. The question then is : could marginal farming be made sustainable?

The challenge is to find a way to safeguard employment, bio-diversity and the social-cultural values of the Old Lands while at the same time improving the position of the farmers and promoting good farming practices. This could be done through income support. The workshop is organized to explore ways of applying income support to traditional farming communities in Egypt.. Europe has more than 30 years of experience in income support policies. We have learnt that income support can be a succesful instrument to maintain traditional values of rural communities and improve both the quantity and the quality of production.

The preparation of the workshop is funded by the Dutch Ministry of Agriculture, Nature and Food Quality. The workshop will produce a roadmap describing necessary steps to formulate a policy that will develop the Old Lands into dynamic rural areas. The roadmap will be made available in August this year.

Appendix 4 Article in "AL AHRAM" - 11/6/2007

BENEFITING FROM EUROPEAN EXPERTISE:
STUDYING APPLICATION OF INCOME SUPPORT FOR SMALL FARMERS

UPEHC and Herman van Wissen, Agricultural Counsellor of the Embassy of the Kingdom of the Netherlands have organized a workshop to study means of raising income for small agricultural communities in Egypt and means of applying the "Income Support Policy", in order to improve agricultural production for small farmers.

Income Support Policy, applied by EU countries for decades, includes offering support to small farmers and reducing taxes according to the social, geographic and productive situation of farmers, with the aim of developing their capacities and updating their agricultural practices.

Head of UPEHC Dr. Osama Khair Eddine stated that in spite of considering agricultural production as one of the pillars of our national economy, yet money invested at present in old agricultural areas is very weak, when compared to the national growth rate. Agricultural production has a significant social dimension, given that farmers constitute 18% of the GDP. Furthermore, 70% of the poor population of Egypt is living in rural areas, a matter that calls for applying the Income Support Policy that is to be applied with the assistance of the EU.

On his behalf, Agricultural Counsellor of the Embassy of the Kingdom of the Netherlands in Cairo Herman van Wissen stated that the ownership of 80% of the old lands does not exceed 5 acres, producing three high-value crops, annually, mostly for domestic consumption. However, working conditions of farmers are harsh. Undoubtedly, modernization of traditional agricultural modes in old lands will improve production, qualitatively and quantitatively. Still, this would be at the expense of manpower and bio-diversity, together with a possibility of losing social and cultural values. Thus, arbitrary modernization is not desirable. Also, rise in value of agricultural land in old areas could prompt many to sell out and opt for another investment activity (commercial or industrial). Thus, it is necessary to provide a lucrative revenue that would encourage farmers to sustain their activity, which is quite important for the entire society.

The Netherlands Ministry of Agriculture, Nature and Food Quality has financed this workshop, in order to lay down the necessary steps for formulating a policy that would help develop old lands, turning them into vital rural areas. "

Appendix 5 Road map towards a policy for a dynamic rural area in Egypt

The objective of this road map is to describe the steps towards a policy for a sustainable dynamic rural area of Egypt. Within this policy targeted conditional income support is suggested as a measure to preserve socio-cultural values, bio-diversity, and general character of the old lands to Egyptian small holders in the Old lands of Egypt (Delta, Valley and The Fayoum), alleviate poverty and to improve agricultural production both in quantity and quality.

Current situation
The current small-scale agriculture in the Old lands is marginal compared to the agriculture in the "new lands", due to scale and applied technology. However, the traditional agriculture in the Old lands is performing quite well under the existing limitations of: small holdings, labour intensive methods, traditional irrigation water application, etc, resulting in three harvests a year. The 'Old Lands' as agricultural area will remain economically marginal as long as land prices outweigh the values of its return. Even in the most optimistic scenario only 10% of agricultural production in the Old lands will be suitable for export. At the moment 80% of the farmers own a holding of less than 5 fedan.

Situation in 2025 "business as usual"
The Egyptian population is growing fast and will reach 95 million inhabitants in 2025, an increase of 22 million in the coming 18 years. As farming is marginal, land sales for real estate development will continue to be more profitable than farming. Urban spread will continue even with a law against building on agricultural lands in place. With 22 million extra mouths to feed and less agricultural land available Egypt will face self sufficiency problems with respect to food. Another threat to agricultural production of the Old lands is farm size. In 2025 farm sizes will have shrunk even more and about 80% of the farmers will have a holding of less than 3 fedan. Upscaling measures to create bigger farm sizes is not realistic because of high land prices. Land abandonment will result in high unemployment rates, since a reduction of 10% of the farmers means at least a million extra people unemployed. Urbanization as well as measures to increasing farm size will have a great impact on biodiversity and the social cultural values of the old lands, which have been in place for thousands of years.

Water is life and water is scarce. Agriculture is the biggest consumer of water, but it comes third in allocation priority after domestic and industrial water needs. So with growing domestic and industrial needs and additional new lands that need irrigation water, the need for rationalizing water for the Old lands will be inevitable.

In conclusion, the main problems for the Old lands occurring in 2025 with business as usual:
- Urban pressure
- Pressure on self sufficiency

- Pressure on water quantity and quality
- Reduction of biodiversity
- Unemployment of former farmers
- Uncertain productivity and product quality

Situation in 2025 with a policy towards rural dynamic areas
Targeted conditional income support has been applied successfully over the past 30 years in Europe. In every country the policy has been specified towards the local needs and objectives. This could also be an approach in Egypt. For Egypt this will mean in general terms that the existing subsidy programs (on input) could be converted towards an targeted conditional income policy. By making use of cross compliancy, local objectives and conditions can be formulated that will protect local needs such as biodiversity and social cultural values and will promote good farming practices. By making marginal farming sustainable as a result of this income support policy farming can remain a viable option in the livelihood strategies of the rural population.

The 29th of May 2007 a workshop on the subject of targeted conditional income support as a suitable measure for the Old lands was held in Cairo with policy makers, experts and donor representatives. The conclusion of the workshop was that targeted conditional income support was considered to be a promising instrument to promote sustainable rural development in the Old lands of Egypt. Although there are still a number of threats and weaknesses to be addressed, the overall feeling was that strengths and opportunities for such a measure outweighed the threats and weaknesses. It was suggested that supplying the farmers with a conditional income, an incentive is provided to economize on water and to apply good agricultural practices. This will not only have a positive effect on the environment, but also on the Egyptian economy and the quality of produce. This effect can be described as the multiplier effect. Last but not least the measure of income support might make farming a more attractive job and that might result in reduction of land abandonment.

Advantages of targeted conditional income policy:
- Proven strategy (EU)
- Cross compliancy with policy objectives
- Multiplier effect
- Specific to local requirements (Fits in with decentralization initiatives)
- Economizing effect on water and other agricultural inputs
- Promotion of good agricultural practices
- Less land abandonment
- Protection of biodiversity and social cultural values
- Contributes to good soil/water management

The outcome of the workshop and further meetings with the Egyptian Ministry of Agriculture and Land Reclamation and the EU Delegation resulted into the following recommendations.

3. Formulating a national rural strategy of which targeted conditional income support will be an important instrument.
4. Setting up a pilot for targeted conditional income support

The steps to be taken to formulate a national rural strategy are:

5. Mobilization of resources to prepare the Conference on a national policy for rural development in Egypt (2007)
6. Creating further political support for the concept of targeted conditional income support(2007)
7. Investigate whether the EU framework for rural development policy can be used as a framework for developing an Egyptian national strategy for rural development policy to allow the introduction of new policy instruments(2007)
8. Conference organized by Ministry of Agriculture and Land Reclamation, EU and the Embassy of the Kingdom of The Netherlands on a national policy for rural development in Egypt (November 2007)

The steps to be taken to set up a targeted conditional income support:

4. Mobilization of resources to prepare the implementation of targeted conditional income support (2007)
5. Preparation of the implementation of targeted conditional income support (2008)
    a. definition of necessary institutional arrangements
    b. Set up an organizational model
    c. Define a legal framework
    d. calculation of budgetary implications
    e. Formulate general eligibility criteria
    f. Definition of policy goals and related income support conditions
    g. definition of monitoring and control system
    h. Perform a risk analysis
    i. Perform a macro economic analysis
6. Ex-ante evaluation of possible targeted conditional income support pilot projects (2008)

The recommendations are formulated as next steps to be taken to come to a national rural strategy and consists of two tranches:further actions

Appendix 6 Payment for environmental services

Introduction

During the last two decades, economic instruments have become increasingly popular to address issues that were formerly dealt with through command and control mechanisms. Payments for Environmental Services (PES) is an innovative approach in resource management that seeks to achieve any or all of the following goals: environmental integrity, poverty alleviation, and financial sustainability. The basic idea is that those who "provide" environmental services by conserving natural ecosystems should be compensated by beneficiaries of the service. PES has been implemented all around the world, trying to jointly address poverty alleviation and sustainable management of natural resources (Landell-Mills and Porras, 2002; Pagiola et al., 2002, Hope et al., 2005). Popular markets where PES has been implemented include, among others, watershed services and carbon sequestration.

In the context of developing strategies to protect socio-cultural and environmental values in the old lands of Egypt, it can be stated that there is a necessity for making the value of eco-systems more explicit. A lot of experience has been gained in watershed management to protect scarce water resources where the value of the eco-system is at present not fully appreciated. In watershed protection, the basic concept in PES is to establish, through a payment system, a connection between the providers of water-related services who are the upland dwellers, and the downstream users or beneficiaries of the environmental service. By establishing a market mechanism, the suppliers of environmental services (who are often poor) can be compensated (i.e. payment for environmental services or PES).

Related to watershed management but not exclusively limited to this issue is the protection of forest resources. . Many conservation stakeholders hope that PES generally would be more successful and cost-effective than indirect conservation approaches, such as integrated conservation and development projects (ICDPs). At the same time, PES could bring substantial livelihood improvements to poor, remote rural dwellers with few income opportunities. CIFOR has been assessing PES experiences inparts of the world (Bolivia, Vietnam and Ecuador, Indonesia and Costa Rica) (CIFOR, 2006) .

Because many environmental services are intangible, developing (simple and straightforward) indicators to measure and monitor the environmental service is an essential element of a PES. Within institutional economics this component is usually classified under the umbrella term transaction costs.

These environmental services are the goods and services that are provided by nature (sometimes also labelled "functions of nature"). Because these services have a public good nature and market failures are common for such services, governments have usually taken up the responsibility of maintaining them. However, during the past decade, more attention has been given to establishing markets as a more effective

and efficient form of reducing market failure. With market based instruments, policy-makers hope to combine the maintenance of environmental services with reduction of poverty, by linking the demand for these services (e.g. improved water flows, storage of carbon) with the supply of such services (e.g. forest conservation by local communities, water management by upstream resource managers). By establishing a market mechanism, the suppliers of such services (who are often poor) can be compensated (i.e. payment for environmental services or PES).

The structure of this annex is as follows. In the next section we will present some key points of PES. In the following section we give a brief overview of experiences in other countries.

Key points

The basic idea of a PES scheme is to create a market for an environmental good, for which there is no market (and therefore no market price). One of the market failures in the provision of environmental services is that the beneficiaries enjoy these benefits without paying for them (free-riding) or the inverse situation, where polluters or destroyers of environmental services do not compensate those negatively affected. In other words, PES schemes require the allocation of titles *de jure* or *de facto* on environmental externalities benefiting third parties (environmental service). Thus, the system identifies economic agents (resource managers) in charge of positive environmental externalities, or "service providers", and the benefited agents (or users). The establishment of cause-effect relations is required. In addition, PES schemes intend to establish an information flow between service providers and users to facilitate the market exchange between both types of agents (FAO, 2004).

Theory indicates that PES schemes can make both sellers and buyers of environmental services better off, and at the same time help to better protect the resource base. There is some confusion regarding what is a PES scheme and what is not. A simple definition describing the PES principles is proposed by CIFOR (2006): "a voluntary, conditional transaction with at least one seller, one buyer, and a well-defined environmental service." The key elements in this definition are voluntary arrangement, conditionality, transactions, sellers, buyers and well-defined environmental or ecological service.

The notion of a voluntary arrangement vis-à-vis command and control type management of natural resources is linked to the paradigm that market based incentives are often more efficient than non-market instruments. For markets to function we need voluntary arrangements. This does not mean that the state cannot play an important role, very often the state will act as a broker between buyers and sellers of ecological services.

Conditionality – the 'business-like principle' only to pay if the service is actually delivered - is the most innovative feature of PES vis-à-vis traditional conservation tools It is also the one element many real-world PES initiatives have trouble dealing

with. Conditionality itself entails a number of key criteria that must be met in order to ensure its success. First of all there must be clear indicators for the condition that the environmental service has been provided. Secondly, there must be a system in place to monitor the indicators. Thirdly, there should be a balanced relationship between the costs of monitoring and the payments for the ecological service. The costs of monitoring are part of the transaction costs of PES.

For transactions to take place there must be some level of institutional basis for these transactions, in addition to the market clearance. The institutional arrangements relate to the definition of the property rights related to the natural resource. Unclear relationship about access, extraction, management and exclusion rights may often hamper the success of a PES scheme. Market clearance refers to the fact that the costs of the management of the natural resource by the sellers should be lower than the opportunity costs of non-management or other forms of management. In addition the willingness to pay for the provision of the service should be higher than costs, taking into consideration not only the direct costs but also the transaction costs involved in both PES and alternative mechanisms. The final component of transactions that play a role here is organization of the market. The market is not a traditional one and will often involve an intermediary or broker. This role can be played by a private sector party taking a commission, an NGO or by the state. Transactions will only take place if intermediaries can build trust between buyers and sellers

The sellers of the environmental service are actually those who manage the resource in such a way that it can adequately provide the ecological service that is desired by the buyers. They should have management rights to the natural resource providing the ecological service. PES may best suit areas with intermediate and/or projected threat scenarios. This is the case in marginal lands with moderate conservation opportunity costs where a relatively modest subsidy can help tip the balance in favour of more desired land use. People facing or exercising moderate, credible environmental threats are more likely to become PES recipients than those already living in relative harmony with nature. Although paying the latter may be perceived as ‘fair’, it does not create additional ecological service provision.
Poor PES recipients are generally likely to gain from participation, unless their access to PES is restructed. Non-income gains of participants may include improved internal organization, consolidated land tenure and better visibility vis-à-vis donors and public entities. Non-participating landless poor could lose jobs in those PES schemes that reduce service-degrading production forms, such as logging, charcoal making, and land clearing for agriculture.

The buyers of the environmental service are beneficiaries who do not have the possibility to manage the resource themselves directly, either due to property rights relationships or due to high transaction costs (*e.g.* remoteness of the natural resource providing the ecological service vis-à-vis the location of the beneficiaries). We feel

that service buyers, not service-selling smallholders and communities, will be the main driving force behind the expansion of PES.

Finally the ecological service to be provided should be clearly defined. Human pressures on natural ecosystems are rising and environmental services previously provided 'for free' become scarcer, thus increasing the scope for PES. But users will only pay if schemes can demonstrate clear additionality vis-àvis carefully established baselines.

There are several pitfalls that have been signalled in the literature on PES. Although the private sector has a significant PES potential, it may be wasted if schemes become overloaded with side-objectives, especially vis-à-vis poverty alleviation.

We will take a closer look at some of the institutional issues related to PES schemes, mentioned above. A crucial aspect in PES schemes is information on the environmental service provided, which is the basis for payments. Because many environmental services are intangible, developing (simple and straightforward) indicators to measure the environmental service constitutes an essential element of a PES. Within institutional economics measuring these indicators is classified under the term transaction costs. In short, transaction costs include contact, contract & control (North, 1990, p28-33):
1. Cost of measuring the valuable attributes of what is being exchanged. Individuals engaged in a transaction need to know what they are buying. This may be difficult, because of asymmetric information: resource managers on one side of the market have much better information than those on the other side. This can apply to PES schemes, whereby the supplier has better information on how he/she manages water resources than the demand party.
2. Costs of protecting rights. Property rights of individuals over assets consist of the rights, or the powers to consume, obtain income from and separate from these assets. Exchange involves the mutual ceding of rights. The rights people have over assets are not constant; they are a function of their own direct efforts at protection, of other people's capture attempts, and of government protection (Barzel, 1989). Protecting rights over environmental services can involve high costs because of its transient nature. In this respect it is useful to refer to the classification of bundles of rights developed by Ostrom and others (Schlager and Ostrum, 1992). In their paper they distinguish between five types of rights that are bundled in a property rights regime, namely:

- Access rights: the right to enter a defined physical property;
- Withdrawal rights: the right to obtain the "products" of a resource, both in terms of goods and (environmental) services;
- Management rights: the right to regulate the internal pattern of usage and the transformation of the resource;
- Exclusion rights: the right to determine who will and who will not have access, withdrawal and management rights, and how those rights can and cannot be transferred;
- Alienation rights: the rights to sell, lease, give-away or bequeath any or all of the above.

The first two components are the basic operational level rights. The last one is what is often seen as property rights in a very narrow sense. In the case of common-pool resources the last three can be considered collective choice property rights. This way of presenting property rights has proven very powerful to disentangle the complexity of common property regimes.

3. Costs of policing and enforcing agreements. Enforcement poses no problems when it is in the interests of the other party to live up to agreements. But without institutional constraints, self-interested behaviour will exclude complex exchange because of the uncertainty that the other party will find it in his or her interest to live up to the agreement. This problem is particularly relevant for agreements in which there are conflicting interests. Policing and enforcing agreements (or rules, laws etc) may involve substantial costs.

Experiences elsewhere

There is a rapidly increasing interest in payments for environmental services (PES) around the world, in many cases with forests as a main focus either with and without an emphasis on watershed management.
Most existing PES are found in developed countries, and the majority of these are state-run, rather than private-sector schemes. Some pilot PES schemes exist in the tropics.

In Latin America, there are some experiences with private sector initiatives, where the buyers pay for the services received either directly or through trustworthy brokers such as NGOs acting as intermediaries. However, most PES schemes so far have been state-run where the public sector represents the interests of service buyers, often with a main focus on watershed protection, e.g. Costa Rica (Rojas and Aylward, 2003), Mexico (CIFOR, 2005; Alix-Garcia et al. , 2004), China (CIFOR, 2005). These schemes resemble somewhat the traditional public subsidy schemes for reforestation and soil protection. New PES schemes put more emphasis on monitoring the compliance of recipients with contractually stipulated rules concerning land-use. Four environmental service types currently stand out (WWF, 2006):

1. Carbon sequestration and storage (e.g. a Northern electricity company paying farmers in the tropics for planting and maintaining additional trees);
2. Biodiversity protection (e.g. conservation donors paying local people for setting aside or naturally restoring areas to create a biological corridor);
3. Watershed protection (e.g. downstream water users paying upstream farmers for adopting land uses that limit deforestation, soil erosion, flooding risks, etc.);
4. Landscape beauty (e.g. a tourism operator paying a local community not to hunt in a forest being used for tourists' wildlife viewing).

Watershed protection schemes warrant special attention in relation to strategies for CC in Tunisia. In Latin America there is some experience in this area (FAO, 2004). A review of this studies concluded that PES systems in watersheds have been applied at

very different stages and for various objectives, from the micro-watershed level – focusing on a very specific service – and usually managed by an NGO, to national programmes controlled by the State. Comprehensive evaluations have yet to be carried out and there are significant uncertainties regarding the cause-effect relationships between land use and provided services. The success of PES in Latin America is partly due to ulterior motives of participants. Many service providers view PES as a way to secure property rights over land.

In Watershed management in the Philippines, PES is also becoming more accepted (Benagen, 2006). Their study concludes that PES should be promoted by the concerned government and non-government organizations in areas where it is proven by the science, economics and institutions that environmental services are being provided by the local communities and there are downstream communities that benefit from the services. Moreover, global, multilateral donors should continue supporting communities that, by their sustainable conservation practices, have contributed global environmental benefits. They feel this could serve as an incentive for other communities to adopt similar practices. Finally PES should be promoted as a policy reform to address illegal activities within critical watersheds since it provides incentives to upland dwellers to protect them by giving them a stake in the resources.

The Costa Rican PES, with enrolment applications exceeding available funding by about factor of three, is illustrative of the need to carefully determine equilibrium prices for service provision (Rojas and Aylward 2003).

In a seminal review Mayrand and Paquin (2004) inventoried more than 300 PES schemes in the world. Most of them are recent or have been running for a few years only, and several PES schemes remain experimental in scope or are still in their pilot phase. Consequently, so far there are few empirical studies that document best practices and lessons learned. However, some initial lessons and emerging best practices have been documented. Mayrand and Paquin (2004) show that a multiplicity of models coexists for very specific conditions and that no single one has so far emerged as a standard. PES systems work best when services are visible and beneficiaries are well organized, and when land user communities are well structured, have clear and secure property rights, strong legal frameworks, and are relatively wealthy or have access to resources.
PES schemes focus on those environmental services for which there is an existing market demand, or for which such demand can emerge under appropriate conditions. PES systems tend to work best when the value of environmental services is high for beneficiaries and the costs of providing services is low. Markets for environmental services differ in geographic scope, strength and structure of demand, the competitiveness, nature and price of commodities sold, and the number of transactions. According to Mayrand and Paquin (2004) local markets are often better defined than global ones, allowing a more precise definition and valuation of services. This can lead to more cost-optimal payments schemes that attribute value to services close to their marginal benefits.
Another finding of Mayrand and Paquin (2004) is that there is a built-in tension in PES schemes between the concurrent goals of effectiveness, efficiency and equity.

The cost-efficiency of PES schemes is closely related to the transaction costs of the system (Meijerink, 2006). PES schemes therefore seek to minimize those costs. On the other hand, payments delivered under PES schemes are more effective when they are targeted and involve detailed management requirements. However, such an approach increases the transaction costs of the system. Furthermore, equity in PES schemes is better served by untargeted payments to small land users. This approach raises transaction costs by multiplying participants in the system and decreases the effectiveness of payments. There are, therefore, difficult trade-offs between cost-efficiency, effectiveness and equity involved in developing PES schemes.

Appendix 7 Area and production figures for Egypt

Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Cereals Crops									
	Wheat		Rice		Summer Maize		Nile Maize		Barley	
Governorate	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria	65,952	169,071	4,177	12,257	27,641	83,583	12,368	29,178	5,849	6,435
Behera	276,988	830,622	195,758	809,358	172,814	664,538	33,891	105,309	4,502	7,387
Gharbia	150,331	429,120	161,785	683,077	94,570	334,476	25,241	77,850	72	165
Kafr El-sheikh	216,781	602,775	255,098	1,136,013	61,346	233,158	3,990	8,922	2,102	3,980
Dakahlia	304,842	868,342	437,541	1,893,507	64,483	249,530	28,517	99,603		
Damietta	26,488	72,392	64,777	239,277	3,056	10,331	838	2,126	28	35
Sharkia	354,689	996,608	271,237	1,106,663	247,187	911,547	11,625	34,852	14,979	27,514
Ismailia	42,523	92,494	6,005	17,649	43,693	116,055	5,157	10,531	5,497	8,305
Port Said	17,800	33,695	21,948	76,818	442	826			13,120	17,633
Suez	2,975	6,889	72	201	3,400	11,237	1,303	2,819	882	1,434
Menoufia	110,547	322,820			255,321	996,922				
kalyoubia	50,035	134,569	19,498	67,948	83,240	285,510			53	88
Cairo	232	517	48	133	280	606	110	277		
Giza	40,549	121,965			64,068	251,434	32,610	100,812	2,133	4,127
Bani Suef	142,998	394,711	276	1,147	124,879	403,838	65,674	166,168	290	487
Fayoum	182,732	476,122	20,241	79,332	53,459	161,523	34,223	49,550	8,626	12,372
Menia	194,703	584,653			274,255	939,268			1,132	2,035
Asyout	163,964	481,398			113,597	401,223			360	687
Suhag	171,739	468,414			123,342	439,378	11,491	29,634	388	514
Qena	106,301	271,570			49,546	130,868	13,764	32,034	2,841	5,376
Luxor	15,873	40,492			12,812	35,787	3,745	7,536	70	105
Aswan	35,401	83,747			11,729	29,884	5,468	10,793	1,957	2,816
North Sinai	19,834	6,932			332	523	99	322	34,955	19,379
South Sinai	146	219							153	181
Matrouh	45,000	56,363			3,086	5,794			29,579	12,411
New Vally	50,820	109,390			1,629	3,548	12,581	31,986	14,632	30,795
Red Sea										
Nobarya	195,043	485,072	1,073	1,931	50,054	165,138	14,414	31,207	3,017	2,763
New Land										
Total	2,985,286	8,140,962	1,459,534	6,125,311	1,940,261	6,866,525	317,109	831,509	147,217	167,024

Source:Central Administration of Horticultural MTI network _ UPEHC

Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Sugar Crops				Fiber Crops			
	Sugar Cane		Sugar Beet		Cotton		Flax	
Governorate	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria	6	240	108	1,948	8,491		33	66
Behera	500	14,507	2,986	51,810	140,120		1,085	5,238
Gharbia	1,235	51,592	7,386	155,305	38,138		3,169	12,629
Kafr El-sheikh	58	2,668	86,704	1,774,224	142,328		2,440	10,924
Dakahlia	501	16,369	31,215	636,319	71,765		4,882	21,168
Damietta	14	418	3,423	74,550	12,486		1,482	5,673
Sharkia	60	2,460	7,863	153,376	59,074		2,758	11,475
Ismailia			1,556	25,658	1,126		14	21
Port Said			1,096	15,467	805			
Suez	54	1,606						
Menoufia	26	849	175	4,133	22,964		83	423
kalyoubia	816	28,560			8,150		70	322
Cairo	64	1,856						
Giza	2,854	103,367	588	9,265	5			
Bani Suef	998	28,047	4,389	96,729	40,496			
Fayoum	507	14,181	6,781	124,567	31,574			
Menia	38,506	1,943,204	6,408	189,722	33,961			
Asyout	2,165	85,962	150	3,009	27,614			
Suhag	17,107	870,097			12,397			
Qena	155,584	7,938,100			9			
Luxor	22,273	1,179,741						
Aswan	77,801	4,031,337						
North Sinai								
South Sinai								
Matrouh								
New Vally					251		138	414
Red Sea							191	741
Nobarya	254	2,156	6,499	113,453	4,832			
New Land								
Total	321,383	16,317,317	167,327	3,429,535	656,586	0	16,345	69,094

Source:Central Administration of Horticultural MTI network _ UPEHC

Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Oily Crops							
	Soya Beans		Peanuts		Sesame		Sunflower	
Governorate	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria					90	360	63	79
Behera	144	189	5987	7916	551	2456	6108	5847
Gharbia	179	212	2	2			12	13
Kafr El-sheikh	126	112			7	25	48	60
Dakahlia	14	22					251	189
Damietta							8	7
Sharkia	94	118	15493	20875	3606	18382		
Ismailia			19010	26541	6825	23488	22	21
Port Said			2	1	39	195		
Suez			53	35	635	3244		
Menoufia	546	910	372	428				
kalyoubia	31	40	607	738	47	263		
Cairo					3	9		
Giza			3729	6008	3060	12722	920	1032
Bani Suef	2322	3402	851	839	2721	11601	2786	3773
Fayoum			507	274	3945	17997	13426	11730
Menia	15251	19052	12921	15857	9837	56045	3302	3612
Asyout	375	619	4176	6364	3597	15898	5695	5369
Suhag	315	447	2048	3076	1913	10805	379	540
Qena	5	3	143	241	4278	24005	18	28
Luxor			260	377	2460	11034		
Aswan	25	50	794	1033	4154	19648	40	32
North Sinai							2	8
South Sinai								
Matrouh			120	180	95	119	120	180
New Vally	336	319	6256	6881	732	2832	296	247
Red Sea								
Nobarya	321	336	74903	101892	19147	75306	1526	1710
New Land								
Total	20,084	25,831	148,234	199,558	67,742	306,434	35,022	34,477

Source: Central Administration of Horticultural
MTI network _ UPEHC

Fruits Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Oranges		Lemons		Mandarine		Grapes		Mangoes	
Governorate	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**
Alexandria	638	5,889	10	39	4	14	763	2,823	6	
Behera	43,568	350,568	4,170	30,178	5,076	31,525	7,181	46,261	4,698	13,014
Gharbia	9,728	87,061	129	1,024	957	8,364	13,493	83,871	432	1,185
Kafr El-sheikh	3,647	31,357	7	28	106	926	111	821	58	84
Dakahlia	3,842	38,716	16	103	149	1,333	7,082	44,042	65	235
Damietta	18	96	922	9,072	1	7	16	79	87	96
Sharkia	34,793	244,529	12,899	142,346	15,245	80,879	3,147	24,246	20,862	83,604
Ismailia	10,692	114,069	1,511	6,851	4,087	36,265	1,805	8,830	64,497	168,854
Suez	89	465	108	241	62	198	285	1,002	3,102	3,858
Menoufia	22,152	243,192	611	5,159	4,290	41,479	4,480	34,846	2,709	8,369
kalyoubia	31,892	287,607	376	1,991	2,154	20,393	855	8,102	1,491	4,631
Cairo	317	1,125	83	84	316	1,019	291	506	1,374	1,598
Giza	4,549	33,013	328	2,129	9,089	60,708	6,185	46,494	7,755	23,685
Bani Suef	3,429	26,659	85	446	2,361	12,994	4,711	29,010	567	1,229
Fayoum	623	2,628	4,598	22,484	175	392	1,487	8,856	5,147	12,065
Menia	1,179	8,225	503	2,806	2,574	15,082	19,451	148,773	1,159	1,814
Asyout	6,943	56,648	888	5,760	3,206	25,904	3,783	30,484	2,247	6,152
Suhag	1,446	11,261	498	2,259	1,005	6,899	582	5,203	260	1,108
Qena	625	3,334	1,604	7,599	234	1,304	470	2,454	1,167	3,921
Luxor	167	1,123	119	389	66	259	393	2,009	371	561
Aswan	178	1,469	1,220	4,957	147	470	98	583	3,331	5,956
North Sinai	1,161	7,327	55	275	702	2,686	1,689	2,868	193	336
South Sinai										
Matrouh	36	50	20	45	17	26	4,061	15,472		
New Vally	1,357	3,162	775	1,512	344	876	266	703	3,781	4,362
Red Sea										
Nobarya	41,335	380,849	8,378	86,658	43,494	361,462	77,320	843,411	14,074	70,234
New Land										
Total	**224,404**	**1,940,422**	**39,913**	**334,435**	**95,861**	**711,464**	**160,005**	**1,391,749**	**139,433**	**416,951**

Source:Central Administration of Horticultural MTI network _ UPEHC

Fruits Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Bananas		Apples		Peaches		Plums		Figs	
Governorate	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**
Alexandria	158	1,656	2,719	9,748	90	56			2,768	4,194
Behera	5,594	103,497	5,083	39,797	2,394	22,113	56	162	143	861
Gharbia	1,341	19,852	4,596	29,714	70	409	1			
Kafr El-sheikh	163	4,134	110	122	104	784			3	7
Dakahlia	822	11,761	317	2,240	1,106	10,040	4			
Damietta	38	395	5	13	3	16				
Sharkia	765	4,328	35	166	284	1,647	7	27	138	570
Ismailia	1,211	20,738	417	767	276	746			215	373
Suez	26	286	87	129	12		3	17	177	505
Menoufia	5,694	96,169	2,064	15,057	440	2,622	642	3,878	5	27
kalyoubia	2,523	41,117	127	915	25	148	1,185	4,949	121	649
Cairo	41	210	182	916	72	141	9	10	123	195
Giza	3,127	50,739	704	4,499	295	1,911	650	3,616	49	335
Bani Suef	2,186	29,503	232	616	45	69	13	78	74	422
Fayoum	5		36	193	12	9			130	1,062
Menia	2,133	21,701	141	696	72	202	12	30	447	3,139
Asyout	2,225	34,486	205	2,452	124	205			135	974
Suhag	2,144	22,975	3	9	16	33			44	331
Qena	8,108	99,454	14	28	17	44			185	586
Luxor	786	7,302							30	53
Aswan	1,603	14,788	2		14	79			158	408
North Sinai			913	3,420	59,335	192,953	3	5	2,433	3,861
South Sinai										
Matrouh			2,589	1,171	27	27	8	21	68,043	146,000
New Vally	17	160	122	306	6	3	4	8	245	337
Red Sea										
Nobarya	14,455	337,346	44,738	465,275	14,560	175,394	128	856	2,704	27,364
New Land										
Total	**55,165**	**922,597**	**65,441**	**578,249**	**79,399**	**409,651**	**2,725**	**13,657**	**78,370**	**192,253**

Source: Central Administration of Horticultural
MTI network _ UPEHC

Fruits Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Gauava		Pomegranates		Apricots		Pears		Olives	
Governorate	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**	**Area**	**Production**
Alexandria	5,596	41,959	26	15	73	169	2,233	7,361	2,783	4,532
Behera	16,275	134,885	28	98	2,155	13,997	516	2,085	5,605	33,649
Gharbia	106	824			23	53	47	220		
Kafr El-sheikh	972	3,633					7	28		
Dakahlia	73	581			61	152	24	124		
Damietta	5,115	43,911					12	35		
Sharkia	422	3,987	6	7	273	747	600	2,760	1,612	5,473
Ismailia	393	805	72	50	430	677	305	404	11,767	***27,809***
Suez	206	683	59	105	297	2,302	22	39	2,650	8,132
Menoufia	131	1,018			319	1,246	1,808	11,302	1,965	5,938
kalyoubia	3,083	21,615			1,326	2,836	313	1,795	220	308
Cairo	126	257	62	130	56	41	22	41	***10,616***	4,710
Giza	236	1,447	113	744	920	3,330	96	339	5,873	32,201
Bani Suef	202	1,372	17	45	112	206	58	66	769	2,112
Fayoum	199	772	14	46	2,702	11,242	124	351	22,827	***41,346***
Menia	457	2,218	67	72	20	28	19	27	311	405
Asyout	370	2,794	3,489	22,455	124	246			1,593	3,397
Suhag	204	1,470	139	896					94	445
Qena	131	478	22	87					263	470
Luxor	156	710			5				100	
Aswan	268	1,088	101		89				8	
North Sinai	202	623	581	759	17	28	134	311	***14,250***	***37,615***
South Sinai										
Matrouh	898	727	36	74	56	38	324	408	***19,599***	***21,996***
New Vally	824	1,790	315	247	359	691	12	2	2,521	1,597
Red Sea										
Nobarya	1,205	14,038	252	1,366	11,074	67,872	1,718	12,800	***12,956***	***82,315***
New Land										
Total	**37,850**	**283,685**	**5,399**	**27,196**	**20,491**	**105,901**	**8,394**	**40,498**	**118,382**	**314,450**

Source: Central Administration of Horticultural
MTI network _ UPEHC

Vegetables Production in Egypt by governorates, Year 2005-2006
Area by Feddan, Production by Tons

	Potatoes		Tomatoes		Squash		Green Beans		Dry Beans	
Governorates	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria	4,681	51,262	48,754	700,076	14,666	108,474	2,646	15,104		
Behera	54,934	577,161	38,781	491,442	12,087	92,650	1,707	7,367	33,576	38,011
Gharbia	28,372	319,044	1,741	25,477	766	5,657	320	1,108	3,247	2,706
Kafr El-sheikh	1,363	18,466	17,674	406,508	2,182	14,199	202	813		
Dakahlia	46,154	488,865	2,769	32,220	140	1,215	374	2,799		
Damietta	8,699	88,547	3,452	26,015	53	287				
Sharkia	11,132	139,925	39,307	485,867	8,258	69,758	1,454	13,520	12	24
Ismailia	10,986	134,554	19,461	462,214	4,435	31,266	6,220	22,149		
Port Said			321	1,605						
Suez	7	70	4,697	71,284	685	3,879	23	92		
Menoufia	47,427	449,958	7,854	193,614	119	942	6,524	22,835	8,244	11,471
kalyoubia	4,849	64,821	3,961	62,219	2,179	23,527	543	3,080		
Cairo	28	196	349	2,630	86	600	22	45		
Giza	15,167	162,473	46,496	929,038	12,078	99,572	16,565	107,448		
Bani Suef	6,106	61,585	22,405	430,355	114	622	586	2,774		
Fayoum	49	461	30,802	528,537	3,172	21,795	901	4,099		
Menia	26,703	214,456	22,934	358,199	438	3,758	493	3,514		
Asyout	749	9,203	13,721	232,669	83	771			85	71
Suhag	3,051	45,721	18,404	478,951	652	6,829	211	1,500		
Qena	71	764	37,147	1,015,591	227	1,303	171	772		
Luxer	7	87	921	15,876	95	435	67	353		
Aswan	21	219	10,311	111,002	1,893	8,343	83	273		
New Vally	62	452	2,668	31,691	126	604	8	54	1	1
Matrouh	41	406	12,167	122,310	1,818	8,784				
North Sinai	617	8,099	8,946	156,790	120	678				
South Sinai			286	3,789	9	36				
Nobarya	29,386	330,635	79,052	1,015,254	29,255	223,788	12,908	36,206		
Red Sea										
New Land										
Total	300,662	3,167,430	495,381	8,391,223	95,736	729,772	52,028	245,905	45,165	52,284

Source:Central Administration of Horticultural

MTI Network - UPEHC

Vegetables Production in Egypt by governorates, Year 2005-2006
Area by Feddan, Production by Tons

	Sweet Potatoes		Garlic		Watermelon		Melons		Cantaloupe	
Governorates	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria	2,252	29,195	1,785	9,725	19,128	284,723			10,906	113,392
Behera	4,837	44,443	890	7,975	19,976	253,869			12,654	166,995
Gharbia			177	1,103	4	64				
Kafr El-sheikh	5,476	86,005	0	0	9,097	127,456			121	635
Dakahlia	239	4,001	874	7,225	5,435	103,265				
Damietta	6,836	88,459	16	123	175	1,750	45	536	8	88
Sharkia			881	10,379	7,268	86,844	2,498	18,745	2,275	22,664
Ismailia			6	48	7,824	113,058	73	636	2,307	26,773
Port Said										
Suez			10	100	194	1,282			275	1,555
Menoufia			73	586	201	5,979			400	3,000
kalyoubia	40	457	477	4,332						
Cairo			0	0						
Giza	57	531	515	3,942	800	7,200	3	38	118	1,352
Bani Suef	5	65	8,975	87,552	1,679	21,330	861	113,377	842	10,064
Fayoum	112	1,456	1,368	11,290	3,265	42,692	4,980	38,220	820	10,730
Menia	795	7,155	8,431	83,235	2,880	36,921	3,998	34,810	78	979
Asyout	38	456	322	4,349	143	1,582	1,064	9,753	101	698
Suhag			338	3,957	765	13,242	599	7,342	14	
Qena	1	1	352	2,489	428	5,598	1,787	23,580	5	36
Luxer			56	411			10	95	50	530
Aswan			376	2,855	21,698	181,116	2,470	10,048	181	741
New Vally			106	819	426	2,615	165	985	133	1,531
Matrouh					27,731	186,696	1,342	4,238	2,211	17,903
North Sinai					5,668	16,405				
South Sinai									123	1,459
Nobarya	6,513	56,709			34,210	380,418			26,721	244,062
Red Sea										
New Land										
Total	27,201	318,933	26,028	242,495	168,995	1,874,105	19,895	262,403	60,343	625,187

Source:Central Administration of Horticultural

MTI Network - UPEHC

Vegetables Production in Egypt by governorates, Year 2005-2006
Area by Feddan, Production by Tons

	Strawberries		Green Peas		Green CowPeas		Artichokes		Eggplants	
Governorates	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria			1,802	9,263	1,365	6,825	1,083	11,166	5,990	62,036
Behera	594	5,713	10,456	46,182			16,259	147,540	11,793	119,643
Gharbia	49	216	5,623	22,438					830	9,321
Kafr El-sheikh			700	3,171					3,476	44,154
Dakahlia			7,455	44,740	736	4,659			423	4,809
Damietta			91	224					705	5,277
Sharkia	2,829	24,773	2,237	12,850	3,337	12,885	38	446	14,417	129,990
Ismailia	2,934	33,865	1,540	6,742					5,462	54,535
Port Said										
Suez			35	193					422	3,011
Menoufia	2	28	6,444	27,010	19	137			4,058	90,178
kalyoubia	3,009	48,015	3,242	19,787	2	10			3,760	46,301
Cairo			17	44					97	910
Giza	120	1,680	2,431	9,596	338	1,801	556	11,255	11,042	121,492
Bani Suef	3	15	390	1,539	280	1,120			1,154	14,218
Fayoum			596	1,976	203	812			2,504	18,570
Menia			986	4,014	514	3,721			1,266	11,730
Asyout			136	681					1,147	12,325
Suhag			44	306					811	8,015
Qena			1	4	35	117			5,416	64,912
Luxer			0				5	39	945	10,855
Aswan			14	42	153	459			2,716	18,528
New Vally			67	293					87	529
Matrouh			835	1,720					664	4,295
North Sinai									247	1,953
South Sinai									15	119
Nobarya	2,492	42,974	13,164	32,368	8,634	27,676	1,327	11,482	30,375	298,213
Red Sea										
New Land										
Total	12,032	157,279	58,306	245,183	15,616	60,222	19,268	181,928	109,822	1,155,919

Source:Central Administration of Horticultural

MTI Network - UPEHC

Vegetables Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

	Okra		Cabbage		Spinach		Cauliflowers	
Governorates	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria	1,479	9,555	2,723	35,092	1,842	18,434	2,417	26,134
Behera	583	2,426	7,449	86,376	130	823	2,197	19,475
Gharbia	293	1,268	1,349	15,419	75	350	208	1,914
Kafr El-sheikh	467	2,238	1,127	14,975			93	1,079
Dakahlia	8	60	1,389	16,988			12	132
Damietta	33	116	90	775			1	14
Sharkia	1,085	9,156	2,932	29,777	250	997	225	1,771
Ismailia	901	3,660	1,174	12,852			11	143
Port Said								
Suez	119	511	244	1,661	210	1,595	65	460
Menoufia	1	6	1,760	21,574			27	213
kalyoubia	414	3,327	6,281	79,618	755	6,044	707	8,300
Cairo	13	52	209	1,033	12	47	72	612
Giza	5,208	39,935	6,629	84,708	1,214	12,706	1,391	17,864
Bani Suef	169	793	340	4,507	4	52	19	178
Fayoum	758	4,229	3,001	43,715	516	2,780	996	8,513
Menia	1,219	9,174	2,310	19,391	55	287	233	2,231
Asyout	937	6,511	525	6,908	7	65	208	2,343
Suhag	961	9,345	810	11,100	30	315	318	4,382
Qena	802	4,963	286	3,505	17		58	731
Luxer	239	1,101	19	161	20	90	3	15
Aswan	803	3,665	336	4,079	341	2,080		
New Vally	309	1,319	30	161	17	73		
Matrouh								
North Sinai	26	80	28	227				
South Sinai			3	18				
Nobarya			1,898	20,857	402	2,539	2,114	17,058
Red Sea				0				
New Land								
Total	16,827	113,490	42,942	515,477	5,897	49,277	11,375	113,562

Source:Central Administration of Horticultural

MTI Network - UPEHC

Vegetables Production in Egypt by governorates, Year 2005-2006

Area by Feddan, Production by Tons

Governorates	Onion		Cucumbers		Peppers	
	Area	Production	Area	Production	Area	Production
Alexandria	1,745	15,336	2,048	14,610	4,722	26,518
Behera	11,053	117,814	5,183	45,637	7,495	43,561
Gharbia	29,039	369,034	234	1,664	457	3,398
Kafr El-sheikh	1,917	13,197	3,493	34,147	1,814	12,057
Dakahlia	22,598	250,665	372	3,784	137	1,004
Damietta	407	4,925	67	502	88	402
Sharkia	6,063	46,695	1,994	12,070	8,222	68,174
Ismailia			6,314	46,896	8,312	44,929
Port Said					0	
Suez	252	2,796	343	2,160	1,343	8,142
Menoufia	3,401	21,746	3,245	56,230	2,625	20,521
kalyoubia	8,900	102,881	52	414	1,052	11,510
Cairo	4	48	2	13	88	494
Giza	8,017	158,860	9,357	69,892	8,107	60,002
Bani Suef	15,871	168,278	2,478	32,703	2,386	11,882
Fayoum	13,052	187,283	3,178	19,954	1,626	10,033
Menia	8,753	90,238	7,649	68,032	5,545	33,907
Asyout	7,547	120,960	393	3,674	1,443	11,678
Suhag	9,709	160,673	2,523	32,917	1,182	9,690
Qena	1,484	20,525	637	4,090	1,664	12,437
Luxer	339	2,955	32	182	120	560
Aswan	926	14,976	1,022	4,611	2,178	9,586
New Vally	1,144	15,404	167	868	69	279
Matrouh	216	528	334	1,728	1,137	3,538
North Sinai	110	865	578	3,960	413	2,856
South Sinai	4	20	8	54	2	14
Nobarya	3,784	38,457	18,977	189,558	18,143	136,169
Red Sea						
New Land						
Total	156,335	1,925,159	70,680	650,350	80,370	543,341

Source:Central Administration of Horticultural

MTI Network - UPEHC

Herbs Production in Egypt by governorates, Year 2005-2006
Area by Feddan, Production by Tons

Governorate	Chamomile		Marjoram		Fennel		Aromatic	
	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria								
Behera			5	10			5	100
Gharbia			6	9			55	1,054
Kafr El-sheikh								
Dakahlia								
Damietta								
Sharkia			11	22	3	3		
Ismailia								
Suez								
Menoufia								
kalyoubia			4	16			3	26
Cairo								
Giza			460	736			17	205
Bani Suef	2,041	1,760	33	136			3,212	68,208
Fayoum	7,442	6,175	1,668	3,925	136	176	12	336
Menia			1,282	1,262	130	100	2	14
Asyout					1,842	3,057		
Suhag								
Qena					82	51		
Aswan					6	3		
Luxor								
New Vally			2	1	8	4		
Matrouh								
North Sinai								
South Sinai								
Nobarya			98	240				
Red Sea								
New Land								
Total	9,483	7,935	3,569	6,357	2,207	3,394	3,306	69,943

Source: Central Administration of Horticultural

MTI Network - UPEHC

Herbs Production in Egypt by governorates, Year 2005-2006
Area by Feddan, Production by Tons

Governorate	Caraway		Spear Mint		Pepper Mint		Hibiscus	
	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria	110	77						
Behera	1,006	839						
Gharbia	39	35						
Kafr El-sheikh								
Dakahlia	4	3	3	5				
Damietta								
Sharkia			8	9	8	8		
Ismailia	6	4						
Suez								
Menoufia	392	490						
kalyoubia	39	44	121	264				
Cairo								
Giza								
Bani Suef			793	1,761				
Fayoum	409	512	651	1,341	412	989	19	17
Menia	1,527	1,058	181	585				
Asyout	13	12	5	3			160	151
Suhag								
Qena	3	1					3,295	1,641
Aswan							5,624	3,146
Luxor							18	8
New Vally	4	3	8	4				
Matrouh			907	882				
North Sinai								
South Sinai								
Nobarya	12	8					70	68
Red Sea								
New Land								
Total	3,564	3,086	2,677	4,854	420	997	9,186	5,031

Source: Central Administration of Horticultural
MTI Network - UPEHC

Herbs Production in Egypt by governorates, Year 2005-2006
Area by Feddan, Production by Tons

Governorate	Basil		Coriander		Anise		Cumin	
	Area	Production	Area	Production	Area	Production	Area	Production
Alexandria								
Behera	16	116	17	15			5	3
Gharbia	31	57	23	22			126	71
Kafr El-sheikh								
Dakahlia								
Damietta								
Sharkia	10	13						
Ismailia								
Suez								
Menoufia								
kalyoubia								
Cairo								
Giza								
Bani Suef	2,082	5,448	410	420			20	13
Fayoum	132	329			3	3		
Menia			13,935	12,397	1,806	1,075	3817	2023
Asyout	2,976	7,564	53	102	401	232	1132	591
Suhag								
Qena					4	2	17	9
Aswan			2	1	2	1		
Luxor								
New Vally			4	2			25	12
Matrouh								
North Sinai								
South Sinai								
Nobarya	55	72	11	7				
Red Sea								
New Land								
Total	5,302	13,599	14,455	12,966	2,216	1,313	5,142	2,722

Source: Central Administration of Horticultural
MTI Network - UPEHC