MINISTRY OF AGRICULTURE
AND LAND RECLAMATION (MALR)
ARAB REPUBLIC OF EGYPT

THE PROJECT FOR THE MASTER PLAN STUDY

FOR

RURAL DEVELOPMENT

THROUGH IMPROVING MARKETING OF AGRICULTURAL PRODUCE

FOR

SMALL SCALE FARMERS

IN UPPER EGYPT

FINAL REPORT

AUGUST 2012

JAPAN INTERNATIONAL COOPERATION AGENCY

SANYU CONSULTANTS INC.
NTC INTERNATIONAL CO., LTD.

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Abbreviations and Acronyms

AERI	Agricultural Exports and Rural Incomes
APIP	Agriculture Production Intensification Project
ARC	Agricultural Research Center
ARDF	Agricultural Research and Development Fund
ASFUS	Agriculture Services and Follow-up Sector
AfDB	African Development Bank
BDAC	Bank for Development and Agricultural Credit
C/P	Counterparts
CAAC	Central Administration for Agriculture Cooperation
CAPMAS	Central Agency for Public Mobilization and Statistics
CDA	Community Development Association
CEOSS	Coptic Evangelical Organization for Social Services
CSR	Corporate Social Responsibility
ECOA	Egyptian Center of Organic Agriculture
ERD	Extension Regional Departments
FAO	Food and Agriculture Organization
FFS	Farmer's Field School
FTF	Farmers to Farmers
GAP	Good Agricultural Practice
GDP	Gross Domestic Product
GNI	Gross National Income
GOE	Government of Egypt
GOJ	Government of Japan
HACCP	Hazard Analysis and Critical Control Point
HEIA	Horticulture Export Improvement Association
HRI	Horticultural Research Institute
IFAD	International Fund for Agricultural Development
IMAP	Project for the Master Plan Study for Rural Development through Improving Marketing of Agricultural Produce for Small Scale Farmers in Upper Egypt
IMF	International Monetary Fund
IRR	Internal Rate of Return
JICA	Japan International Cooperation Agency
M/P	Master Plan
MALR	Ministry of Agriculture and Land Reclamation
NBE	National Bank of Egypt
NPV	Net Present Value
PBDAC	Principle Bank for Development and Agricultural Credit
PPP	Public Private Partnership
PRA	Participatory Rural Appraisal
RIEEP	Rural Income and Economic Enhancement Project
RRA	Rapid Rural Appraisal
S/W	Scope of Work
SFD	Social Fund for Development
SIM	Subscriber Identity Module
SME	Small and Medium Enterprises
SMS	Short Message Service
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

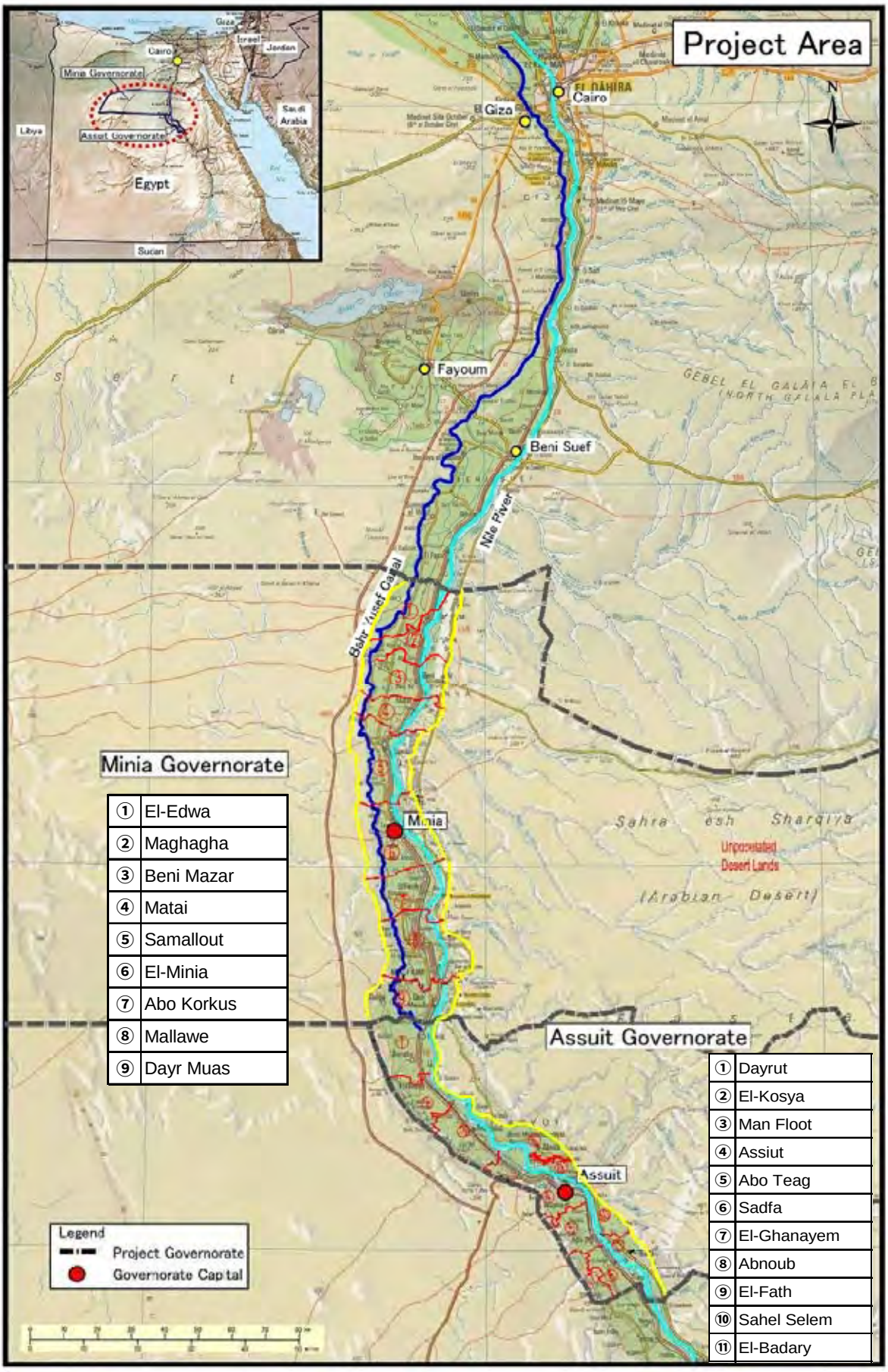
Currency Equivalents

As of August 2012

LE	=	EGP
LE 1.00	=	JPY 13.030
USD 1.00	=	JPY 78.31

Weight and Measurements

1 feddan	=	0.42 hectare
1 karat	=	1/24 feddan (0.0175 hectare)
1 ardab of maize	=	140 kg
1 ardab of wheat	=	150 kg



①	El-Edwa
②	Maghagha
③	Beni Mazar
④	Matai
⑤	Samallout
⑥	El-Minia
⑦	Abo Korkus
⑧	Mallawe
⑨	Dayr Muas

①	Dayrut
②	El-Kosya
③	Man Floot
④	Assiut
⑤	Abo Teag
⑥	Sadfa
⑦	El-Ghanayem
⑧	Abnoub
⑨	El-Fath
⑩	Sahel Selem
⑪	El-Badary

Photographs

The general view of farmlands in the Project Governorates (winter): most of the lands are occupied with wheat (yellow color farmland in the photo) and berseem (green color farmland). Both are important crops, while promoting horticulture is desirable to increase the profitability per land.

Women selling vegetables and fruits on the street of the village: they sell produces brought by traders. The population density is high and the average population per village reaches to around 10,000. There is a potential of establishing a system of "local production-local consumption".

The 6th October Wholesale Market in the suburb of Cairo city. Agriculture produces are brought from all over the country to meet the demand of urban population.

Workshop for situation analysis with the District officers of the Governorates: problem analysis for increasing the income of small scale farmers.

Workshop for situation analysis in Abad Sharona Village, Maghagha District, Minia Governorate: the village representatives approved to hold he workshop togther with men and women and in fact women especially widows were ery active at the workshop.

The Pilot Project: Market Information Collection and Dissemination

The C/P collected market information using internet, as well. The market price information was sent to village agriculture cooperatives and farmers by SMS in order to help them sell their produce. The cooperatives posted the price at the cooperative billboard. The Ministry of Agriculture and Land Reform (MALR) has started Mobile Extension Service as Public Private Partnership.

The Pilot Project: Promoting Horticulture Crop to Small Scale Farmers / Increasing Profitability through Selling Produce in Off-season

The Pilot introduced small scale farmers to intercropping of maize and tomato, which makes possible to engage in horticulture while maintain some extent of maize, staple food for farmers. The intercropping was also applied from the marketing point of view, namely to sell tomato in off-season when the market price is high: maize gives shade to tomato to reduce the heat, so that tomato can be well grown during the hot weather. Demo-farms were established and study tours were conducted.

The Pilot Project: Cost Reduction and Quality Improvement by using Organic Fertilizers

To mitigate the high production cost raised by farmers as an important issue and also to improve the quality of the produce, organic materials application (fertilizers and bio-control) was demonstrated. Application of organic fertilizers reduced the chemical fertilizers by half and made the crop grow healthy more resistant to pest and diseases: consequently use of chemical pesticides was avoided.

The Pilot Project: Cost Reduction and Quality Improvement by using Organic Fertilizers

Field day was held at the demo-farm of organic fertilizer and bio-control application. Farmers managed to reduce production cost and the quality of less or non-chemical used produce though it is not a prefect organic produce, was appraised at the direct shops of the Governorate.
Local traders can appreciate the grade with shape and size but it needs more promotion to make them appreciate the value of non-chemical used produce. The organic produce has been getting popular in Egypt.

The Pilot Project: Processing and Marketing of Excessive and Low Grade Produce

Established agro-processing unit using the building of the Delga village agriculture cooperative in Minia in their compound: the Pilot was implemented as the agriculture cooperative as the entry point. The cooperative has land, buildings, and human resources. Using these resources it is expected to create job opportunity and activate rural economy.

The Pilot Project: Processing and Marketing of Excessive and Low Grade Produce

Study tour by the women working for the processing unit in Delga village agriculture cooperative in Minia: they visited supermarkets in Minia city and learned how the products are packaged to attract the customers and the demand of the customers, too.

The Pilot Project: Processing and Marketing of Excessive and Low Grade Produce

Since tomato is a basic vegetable for Egyptian dish, tomato paste is usually used for cooking. In Rifa village agriculture cooperative in Assiut, they have worked on tomato paste processing as the major product. Direct shops in the Governorate and District as well as selling at the village are used for marketing.

The Pilot Project: Processing and Marketing of Excessive and Low Grade Produce

El Badary District in Assiut Governorate is a pomegranate region as it occupies 90% of the production in the country. In this area, pomegranate vacuum packing was carried out in order to utilize the low grade one, which has just scar on the surface.

The Pilot Project: Reducing Post-harvest loss and Quality Improvement

In Abnounb District, Assiut Governorate, in which basil has been a specialty crop, basil drying yard was established managed by the Arab El Kadadeh village agriculture cooperative. The Pilot introduced an improved drying method using kafas on the concrete yard, which made it possible to reduce post-harvest loss and quality improvement. They could sell the high grade basil to an exporter. The cooperative can contribute to the rural economy by buying green basil from small scale farmers in priority at higher price.

Diversified and a little amount of crop production in a farm plot has been demonstrated at the same time of organic fertilizer and bio-control application. The farmer showing the big cabbage grown without chemical pesticides also grew lettuce, carrot, etc. in the 1 feddan demo-farm. This enabled him to keep harvesting and continuously obtain cash income.

Non-chemical produce and the processed products at the Pilot sites have been sold at the direct shop of the Assiut Agriculture Directorate (photo on the right hand corner). The direct shop has function of supporting the advertisement and marketing of the produce.

The Project for the Master Plan Study for Rural Development through Improving Marketing of Agricultural Produce for Small Scale Farmers in Upper Egypt (IMAP)

Background

In Egypt, 30 million people, or around 43% of the nation's population, still live with a daily income of USD $2 per capita or less (UNDP Human Resource Development Report [HRDR] 2007). Therefore, poverty eradication is one of the most important issues facing the country. Above all, Upper Egypt is the region with the highest poverty, as 60% of the poor live in Upper Egypt and 50% live in the rural areas of the region (UNDP HRDR 2004). In Upper Egypt, about 53% of the working population works in agriculture, and therefore improving the livelihoods of people working in this sector, such as farmers, would significantly alleviate poverty in Egypt. About 85% of farmers in this region are small-scale farmers with holdings of less than 3 feddan (1.26 ha). Due to the lack of development of farmers' organizations such as agricultural cooperatives, small scale farmers have not been able to add value to their agricultural produce by collective marketing, preservation, introducing new products based on market information, agro-processing, etc. Regarding the aforementioned situation, the Government of Egypt (GOE) requested the Government of Japan (GOJ) for technical cooperation aiming at improving the livelihood of small scale farmers through improving marketing of agricultural produce. In response to the request, JICA and the Agriculture Services and Follow-up Sector (ASFS) of the MALR concluded the Scope of Work (S/W) for the Project in December 2009.

Objectives

The basic concept of the Master Plan (M/P) in this Project (IMAP) is to formulate plans in the short term (within 5 years), the midterm, and the long term (around 15-20 years) for rural development through various activities, including introducing agricultural produce and varieties, post-harvest preservation, and raising values by processing based on market demand. IMAP is implemented with the following objectives:

1. To formulate a Master Plan for Rural Development through improving marketing of agricultural produce for small scale farmers in Upper Egypt after verification by the pilot projects
2. To provide opportunities for counterpart personnel to obtain relevant skills and technology through formulating the Master Plan

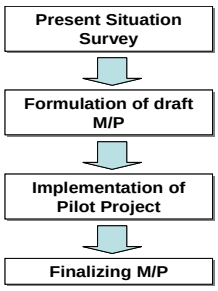
Project Governorates

The Project area covers Minia and Assiut Governorates situated in the middle of Upper Egypt. The populations of Minia and Assiut governorates in 2010 are 4.5 million and 3.7 million, respectively. Their shares are 5.8% and 4.8% of the total population, respectively. The average annual growth rate is as high as around 21%. The population densities of Minia and Assiut are 1,900 per km^2 and 2,300 per km^2, respectively. The shares of rural population in Minia and Assiut are 81% and 74%, respectively.

According to the Human Development Report (UNDP), the project governorates are the area with high poverty incidence as the shares of the poor in Assuit and Minia in 2008/09 number 61.0% (worst among 29 governorates) and 30.9% (the sixth worst) respectively. The rate for that year in Minia improved from the year 2004/05, when the rate was 39.4%, the fourth worst in the country. The target beneficiaries of the Project are the small scale farmers defined as cultivating less than 3 feddan (1.26ha) and 5 feddan (2.1ha) in New Land, who are living in the rural area, where most of the poor live.

Study Schedule

At first a draft M/P is formulated and the pilot projects in the short term time scale is implemented based on this draft. Any lessons learned or feedback garnered will be reflected in the final M/P. The Study is implemented from March 2010 to August 2012 for a total of 30 months divided into two phases. Phase I including the situation analysis of the project area, formulation of the draft M/P and selection and design of the pilot projects lasted by the end of February 2011. Phase II started in March 2011 and implemented the pilot projects for 14 months, which covered two crop seasons (one summer and winter crop each). Reflecting the lessons learned from the pilot project implementation, the final Master Plan was formulated in August 2012.

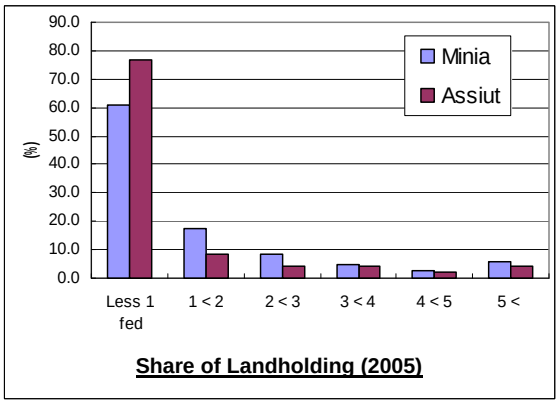


Study Flow

Present Situation of Agriculture and Agricultural Marketing

(Most of the farmers are small scale)

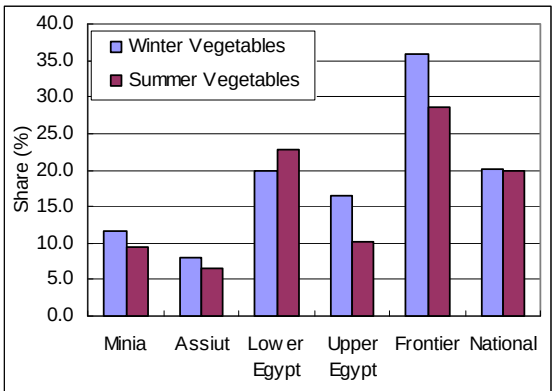
According to statistics from 2005, the share of small scale land-owning farmers with less than 3 feddan (1.26ha) of arable land reaches 86.6% in Minia Governorate and 89.2% in Assiut Governorate. Among them the majority of small scale land-owning farmers have less than 1 feddan (0.42ha). There are no statistics regarding landless farmers or laborers, but estimates are about 20% of farmers in Upper Egypt. Most of the small-scale farmers are cultivating traditional crops such as maize, wheat and berseem and do not grow profitable horticulture crop very much. They also first allocate the produce for their consumption and then sell the surplus. On the other hand, there are farmers who are cultivating commercial crops although their cultivated land is very small. Farmers would choose to go into cash crop cultivation instead of cultivating traditional crops based on economic benefit.



Share of Landholding (2005)

(Farming with traditional crops prevalent)

Figure on the right hand shows the share of the vegetable crop in the winter and summer seasons by region in 2010. The lower share of vegetable crops in Minia and Assiut is significant compared to other region. Shares of vegetables in winter and summer in Lower Egypt are 20% and 23%, respectively, while the share of vegetable crops in Minia is around 10% for both summer and winter and the share of vegetable crops in winter and summer in Assiut is only 8% and 7%, respectively. To summarize, the share of traditional crops is very high in Upper Egypt and low-profit agriculture has been practiced.



Share of Vegetable Crop by Region(2010) (made from MALR Statistics)

On the other hand, Upper Egypt is a producing center of medicinal and aromatic plants. The region produces these crops extensively, though their cropped areas are small. Production of pomegranates in Assiut represents 90% of the country's total. The project governorates have the potential to be centers of production for some specialty crops, based on their geographical advantages.

(Issues on Agriculture and Agricultural Marketing)

- Poor attention to post-harvest during transactions: storage loss of wheat due to storing on the ground, devaluation by the distribution of vegetables with Kafas, wooden baskets, losing freshness of vegetables for a short time by exposure to extreme temperatures which can cause drying, many impurities mix with herbs and medical herbs when they are dried, etc.
- Low profit for producers: distribution starts from first middlemen to local wholesalers, and then wholesalers deal with second middlemen, and finally, second middlemen deal with retailers and consumers. There are usually four levels in the distribution system, and transaction margins at each level contribute to low profits for farmers.
- High production cost: especially in 2011 the price of chemical fertilizers skyrocketed as 3 times as the price of last year, so the poor return by the rise of production cost have become clearer. Farmers should increase the application rate of organic fertilizer, such as compost made from crop residue and animal dung, to save cash expenditure for chemical fertilizer. Besides, some bio-fertilizers are developed and produced by private companies under technical assistance of universities and research institutes. The agricultural extension service agencies should collaborate with MALR research institutes, universities and private firms. Linkage with the private sector would be important.
- Weakness and decline of small farmers' marketing organizations: due to the liberalization of agricultural marketing since 1980's, general cooperatives are unconcerned with marketing. Today the agricultural cooperatives have been circumscribed in their duty of distribution of agriculture inputs and administration of farmland. Village agricultural cooperatives have assets and skilled staff and also deal with distribution of agriculture inputs. They have a potential to deal with the agriculture produce, as well. In order for the village agricultural cooperatives to be an agency of activating rural economy, the cooperative should become more business oriented organization.

Basic Data of the Project Governorates

Item	Minia	Assiut	Total (Average)
No. of Village Agr. Cooperative	342	250	592
No. of Farmers with less 3fed(2005)	250,340(86.6%)	339,466(89.2%)	589,806(88.1%)
Area of less than 3fed holdings	177,888fed (43.0%)	138,146fed (42.5%)	316.034fed (42.8%)
Income of Traditional Farming(*): Land owning farmer(0.5fed)	LE3,300/year	LE3,100/year	LE3,200/year

(*)Summer: maize; winter: wheat, berseem: the average land holding with less than 3 fed is 0.54fed, hence 0.5fed was applied as standard.

Master Plan

＜Development Goal＞

This Master Plan is proposed in order to contribute to realizing the vision of "Sustainable Agricultural Development Strategy towards 2030 (SADS)" of the MALR Also from the concept of the M/P, it will contribute to the strategic goals of SADS, namely "Increasing the competitiveness of agricultural products in local and international markets" and "Improving the living standards of the rural inhabitants and reducing poverty rates in the rural areas". Then the Development Goal of this M/P is set as "Income of small-scale farmers is increased through improving marketing of agricultural produce". Following the SADS 2030, the target year of the M/P is set as year 2030 and short term and mid & long term plans are formulated.

The Targets of M/P

	Short Term Plan	Mid & Long Term Plan
M/P Target Year	5 Years (2013－2017)	13 Years (2018－2030)
Targets	• Support 20 village agricultural cooperatives • Guide 1,100fed (2,300farmers) for value added agriculture • Support 25 post-harvest and agro-processing facility establishment (create job of 144 people)	• Support 100 village agricultural cooperatives • Guide 4,160fed (8,800farmers) for value added agriculture • Support 78 post-harvest and agro-processing facility establishment (create job of 432 people)
App. Project Cost	LE19,000,000	LE54,000,000
Income Increase	Ave. 900LE/year/0.5fed (30% increase)	Ave. 1,100LE/year/0.5fed (34% increase)

＜Development Approaches＞

- Awareness creation of small scale farmers: the focal point is the awareness of the small-scale farmers who think that they cannot cultivate profitable horticulture crops. On the other hand, there are farmers whose farmland is tiny but venture into horticulture crop production from the economic point of view especially in the specialty crops area. Technologies for horticulture to increase profitability per land will be introduced.
- Local production – local consumption: farmers would be able to sell their produce in their area as the vegetables are usually imported from outside the villages in many cases. Since the population growth rate of Egypt is still high and the rural population is big, the concept of local production-local consumption is so vital and it can skip the multiple brokerages.
- Strengthening specialty crop area: existing specialty crop areas are strengthened in their competitiveness by improving their production, post-harvest treatment and selling based on the needs of the markets.

＜Development Strategies＞

The Development strategy to increase farmers' income through promoting horticultural crops, quality improvement, crop diversification, agro-processing, etc. is set as "Small scale farmers producing, processing and selling agricultural produce at high value according to the needs of markets in cooperation with their peers". Under the strategy, the following tactics are set according to the stage of value chain, namely sales, post-harvest, and input/production.

Development Tactics

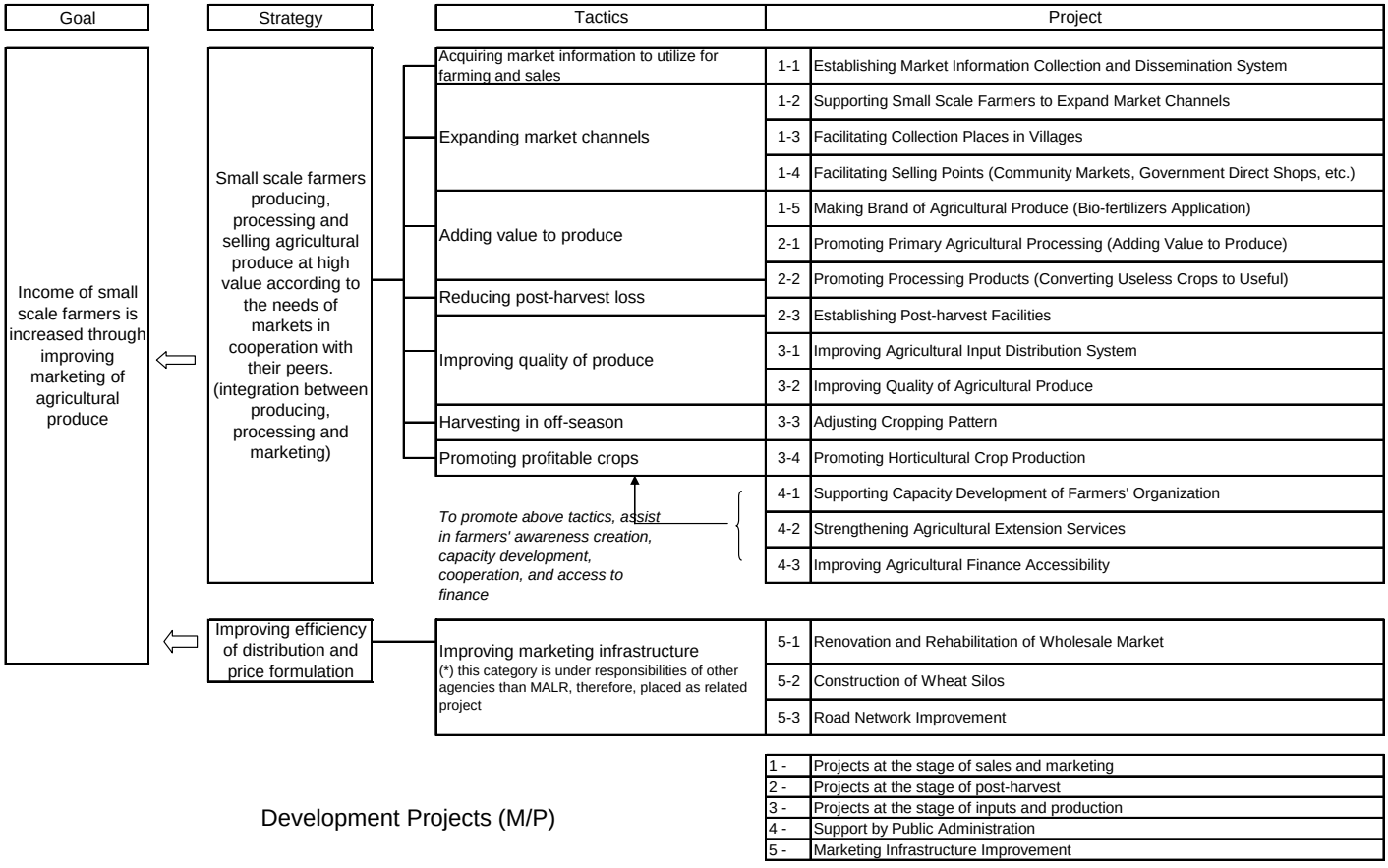
Sales:	acquiring market information to utilize for farming and sales / expanding market channel / adding value to produce
Post-harvest:	adding value to produce / reducing post-harvest loss / improving quality of produce
Input/Production:	improving quality of produce / harvesting in off-season / promoting profitable crops

The Government's administration will assist the farmers in awareness creation (production for sale), cooperation, technology improvement (extension), improving access to finance, etc.

Improving the distribution environment in the region would also be effective to improve the marketing by the small scale farmers, namely establishing a wholesale market will improve the efficiency of the distribution system of agricultural produce, and also the market would contribute to pricing the produce, as it would be a signal to the producers and traders for their transactions. "Improving the efficiency of distribution and pricing" is therefore set as another development strategy. The responsibility for establishing and operating a wholesale market is not for MALR but for the Governorate. This M/P, therefore, refers to the infrastructure improvement as a related project.

＜Development Projects＞

Under the above development strategies and tactics, development projects are formulated. The development projects are based on the countermeasures for the issues of the present situation, categorized according to the stages of input/production, post-harvest and sales. The projects are organized along with the development strategies and tactics set to realize the development goal of the M/P.



Development Projects (M/P)

＜Implementation Arrangement＞

The proposed development projects are presented along with the value-chain of selling, post-harvest and input/production. The components of the projects include institutional setting-up, capacity development of stakeholders, and infrastructure improvement. It is proposed for the effective implementation to group the projects in consideration of the stages of value-chain and the components of each project and form implementation groups with the Governorate Agriculture Directorate (GAD) as the core. It is proposed to establish a regional implementation committee involving various stakeholders when implementing the projects as public-private partnership (PPP) calling for the participation of farmers, agricultural cooperative, and private companies.

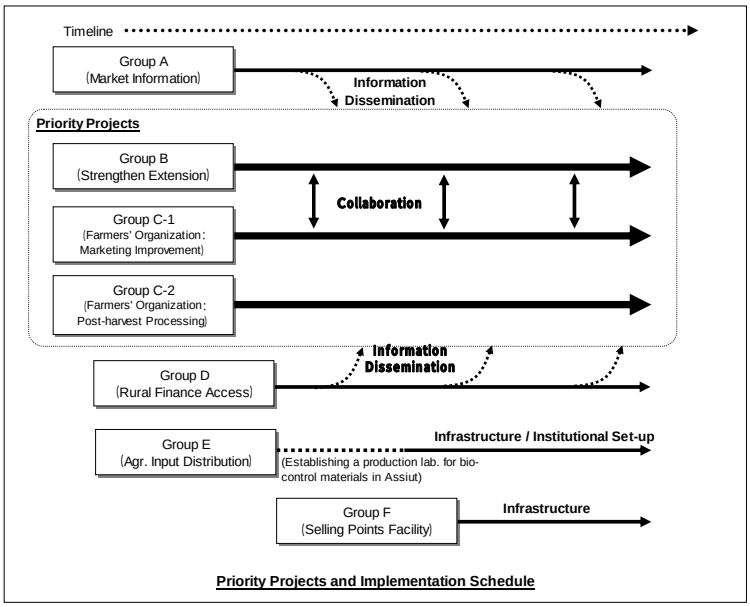
GAD is required to strengthen its function as a coordinator of the committee, supporting the establishment of agri-business e.g. supporting organization, business planning, support and information provision for licensing, facility designing, loan facility, provision of technical and management trainings, support for making partnership among public entity, private sector and research centers for agriculture extension, manage direct shop at Governorate and District Offices, support matching between farmers and traders, support selling quality improved agricultural produce, processed products, and making brand.

Forming Implementation Groups and Activities

Group	Project	Category	Main Actors	Capacity Development	Direction
Group A	1-1 Market Information System	PPP, Institutional set-up	Central, Governorate Agr. Extension Sector, ARC	–	Already started PPP in MALR will be used to promote this project
Group B	4-2 Strengthening Extension 3-1 Improving Agr. Input Distribution 3-2 Improving Quality of Produce 3-3 Harvesting in Off-season 3-4 Promoting Horticulture	Capacity Development	Governorate / District Agriculture Extension, Village Extension, ARC, Agr. Research Station, University (Minia, Assiut), Farmers Based on existing extension line, to participate in the committee to be formed by the Group C-1	Governorate / District Officers, Extension workers, Farmers	Basically implement by the existing extension line and ARC. It is rather easy to initiate the project as it is based on the existing extension line, but to make more effective implementation, it needs to collaborate with Group C. District Extension Plan should be prepared based on the specialty crops and situation of the small scale farmers in the area and the project site should be selected based on the plan.
Group C					
Group C-1	4-1 Strengthening Farmers' Organization 1-2 Expanding Market Channels 1-5 Making Brand of Agr. Produce 1-3 Facilitating Collection Places	Capacity Development (1-3: Infrastructure)	Governorate / District Agr. Cooperative Sector, Village Agr. Cooperative, Governorate / District Agr. Cooperative Union, Farmers, (Private traders etc.): establish implementation committee with these stakeholders	Governorate / District Officers, Cooperative Officers and Organization, and Farmers	It needs to revitalize the agr. Cooperative. It needs to start with small number of cooperative and expand the activities gradually. It is effective to collaborate with Group B to realize the added-value.
Group C-2	4-1 Strengthening Farmers' Organization 2-1 Promoting Primary Agro-processing 2-2 Promoting Processing Products 2-3 Establishing Post-harvest Facilities	Capacity Development (consider public investment in part of facility)	Governorate / District Agr. Cooperative Sector, Village Agr. Cooperative, Governorate / District Agr. Cooperative Union, Farmers, (Private traders etc.): establish implementation committee with these stakeholders	Governorate / District Officers, Cooperative Officers and Organization, and Farmers	Agr. Cooperative is the entry point of this project. Since the cooperative needs to prepare capital, it needs to take time for capacity development and assist in preparing the business plan and conduct trainings. Partial public investment e.g. drying yard could be considered. The candidate site should be selected by open recruitment
Group D	4-3 Improving Rural Finance Accessibility	Capacity Development	Governorate / District Agriculture Offices	Governorate / District Officers	Collect the information on existing rural finance and hold seminar to disseminate the information. It is relatively easy to start the activity.
Group E	3-1 Improving Agr. Input Distribution	Infrastructure, Institutional set-up	Governorate / District Agriculture Offices, Agriculture Research Station	–	Infrastructure improvement of seedling nursery etc. in the GAD and Agriculture Research Station. At the same time, institutional set-up for supply system will be carried out. It needs fund to improve the infrastructure.
Group F	1-4 Facilitating Selling Points	Infrastructure	Governorate / District Agriculture Offices, Village Agr. Cooperative	–	It is a small scale infrastructure and equipment provision. In the area of Group C, judged with necessity, urgency and sustainability, the implementation will be followed.

＜Priority Projects＞

Considering the experiences from the Pilot Projects, capacity development of the stakeholders such as small scale farmers is crucial. It is, therefore, proposed to put Group B (strengthening extension services) and Group C (strengthening farmers' organization) in the highest priority. Group A (Market Information) has already been implemented by the Ministry as PPP. This group should take action to incorporate the market information to the Mobile Extension Service. Group E (Agricultural Input Distribution Improvement) and Group F (Facilitating Selling Points) will be implemented according to the progress of Groups B and C. Group D (Agricultural Financial Accessibility) should start information collection and dissemination activities so as to support the extension of farming technologies and agri-business promotion.



Priority Projects and Implementation Schedule

■ Conclusion

This Master Plan is putting the promotion of value added agriculture by strengthening agricultural extension services and also agricultural marketing and agro-processing business through activating village agricultural cooperatives into priority projects and their implementation will activate the rural economy. It is concluded that this Master Plan can contribute to promoting the Agriculture Development Strategy of the Ministry in Minia and Assiut Governorates in order to develop the agriculture sector and reduce poverty in the rural area.

Project Profile

Counterpart： Ministry of Agriculture and Land Reclamation（MALR）
Consultant： Joint Venture: Sanyu Consultants Inc., NTC International Co., Ltd.
Project Period: March 2010 ～ August 2012
Category： Master Plan Study

EXECUTIVE SUMMARY

Introduction

This Report presents the Master Plan for "The Project for the Master Plan Study for Rural Development through Improving Marketing of Agricultural Produce for Small Scale Farmers in Upper Egypt" (IMAP).

IMAP is implemented with the following objectives:

1. To formulate a Master Plan for Rural Development through improving marketing of agricultural produce for small scale farmers in Upper Egypt after the verification by the pilot projects
2. To provide opportunities for the counterpart personnel to obtain relevant skills and technology through formulating the Master Plan

IMAP is basically a Master Plan (M/P) Study focusing on improving marketing of agriculture produce for small scale farmers. The basic concept of the M/P in this Project is to formulate plans in the short term (within 5 years), the midterm, and the long term (around 15-20 years) for rural development through various activities, including introducing agricultural produce and varieties, post-harvest preservation, and raising values by processing based on market demand.

The Project area covers the Minia and Assiut Governorates situated in the middle of Upper Egypt, and the target beneficiaries are the small scale farmers defined as cultivating less than 3 feddan (5 feddan in New Land). The Agriculture Services and the Follow-up Sector (ASFS) of MALR shall act as the counterpart agency to the Study Team. Other relative agencies in the Project are agricultural cooperatives, Agricultural Research Center, Central Administration for Agricultural Extension, Economic Affairs, Central Administration for Foreign Agricultural Relations, Minia and Assuit Governorate Directorates.

The Study Approach

The Project is implemented with the process of (1) Outline Survey/Present situation analysis → (2) Formulation of draft M/P → (3) Implementation of Pilot Projects → (4) Finalization of the M/P. Outline Survey/Present Situation Analyses were carried out in two categories, namely Sector Survey and Village Level Survey. Sector Survey was to assess the area and subjects from technical and institutional aspects and macro point of view by the Study Team and the counterparts. The village level survey is conducted to seek for details from the farmer's point of view and therefore, the workshops with villagers were carried out as well as the field survey by the Team.

To get into the village level in the broad area, the Team held workshops with the Governorate and District officers in order to analyze the situation of the Governorate and to select some villages on which to focus in the field survey. On how to position the agricultural marketing in the livelihood of the small scale farmers, the Team requested the officers to select two types of villages. The first type is a "usual (typical) village" in the area, which can represent the general situation of the area analyzed at the workshops. Another one is "potential village", which has potential to improve the marketing of agricultural produce.

It is expected that the usual (typical) village would represent the area so that we could capture the common issues in the area and would be able to position the marketing aspects in the usual (typical) village. This process was to estimate the effects of improving marketing of agricultural produce for

small scale farmers from the broad rural development point of view. At the workshops with the officers, one usual (typical) village from each District was selected i.e. 9 villages in Minia and 11 villages in Assiut and 3 villages from each Governorate were selected to hold workshops with the villagers.

As for the potential villages for marketing, we focused more on the direct issues to improve the agriculture marketing and therefore picked some specialty crops prevalent in the Project area where marketing activities have taken place. After the selection of some potential villages, the Team investigated the villages and held second workshop with the Governorate and District officers and then agreed to focus on garlic, potato and onion in Minia and tomato (seedling), basil and pomegranate in Assiut. The Team studied in detail on the agriculture production and marketing for these focused crops to get more understanding.

Together with the sector survey and the village level survey, the findings were analyzed and integrated to identify major constraints and potentials in the Project area. This integration was carried out with the counterparts through workshops and meetings. Based on the result of the present situation analysis, the draft M/P was formulated, which consists of development framework, development strategies and programs in short, mid and long terms. From the draft M/P, some components were implemented as Pilot Projects with the duration of 14 months from March 2011 to April 2012. Reflecting the results of the Pilot Projects, the M/P was finalized.

Agriculture Sector in Egypt

The agriculture sector in Egypt plays an important role in the Egyptian economy such as providing food security to the increasing population and garnering profits from the exports of agricultural produce. Annual GDP growth in the agriculture sector has been stable, recorded as 3% to 4% from the years 04/05 to 09/10. The share of the agriculture sector in the overall GDP in 04/05 was 14.9%, and it maintains the share of around 14% to date. The agriculture sector is more significant in job opportunity as the sector still provides 28.3% of working population with job opportunities in 2010 (CAPMAS), and therefore remains important.

Agricultural Development Plans

MALR has formulated a series of strategies of agricultural development since the early 1980s in order to set frameworks to be adopted by the State in realizing developmental goals of the Agriculture Sector. MALR has established the new strategy, “Sustainable Agricultural Development Strategy towards 2030.” The Strategy 2030 has set the following vision, mission and strategic goals:

Vision: “To achieve a comprehensive economic and social development based on a dynamic agricultural sector capable of sustained and rapid growth, while paying special attention to helping the underprivileged social groups and reducing of rural poverty.”

Mission: “Modernizing Egyptian agriculture based on achieving food security and improving the livelihood of the rural inhabitants through the efficient use of development resources and the utilization of the geopolitical and environmental advantages and the advantages of the different agricultural regions”

Strategic Goals:

1. Achieving sustainable use of natural agricultural resources;
2. Increasing the productivity of both the land and water units;

3. Raising the degree of food security in the strategic food commodities;
4. Increasing the competitiveness of agricultural products in local and international markets;
5. Improving the climate for agricultural investment; and
6. Improving the living standards of the rural inhabitants, and reducing poverty rates in the rural areas.

Project Governorates in Regional Setting

The total population in Egypt in 2010 is estimated at 77.7 million. The populations of the Minia and Assiut Governorates in 2010 are 4.5 million and 3.7 million respectively. Their shares are 5.8% and 4.8% of the total population respectively. The average annual growth rate of the recent decade in the country is 2.0%, while that of Upper Egypt was 1.9%. The average annual growth rates of Minia and Assiut were also 2.1% and 1.8% respectively. According to the population census in 2006, the share of urban and rural populations in the country are 43% and 57% respectively. In the Minia and Assiut Governorates, the share of rural population is much higher than the national average as the shares of rural population in Minia and Assiut are 81% and 74% respectively.

On the share of poor persons by Governorate according to the Human Development Report (UNDP) the worst five governorates are always found in Upper Egypt. The Assiut Governorate has been ranked worst since 2001/02 and the share of poor persons has been increasing. The share of the poor in Assuit in 2008/09 numbered at 61.0% which is significantly higher than even the second worst governorate. The share of poor persons in Minia in 2008/09 is 30.9% ranked at the sixth worst. The rate in that year in Minia has been improved from the year 2004/05, in which the rate was 39.4% the fourth worst in the country.

The agriculture sector plays an important role in the two governorates for employment opportunities. The shares of the workforce in the agriculture and hunting industries in 2010 in Minia and Assiut were 51.3 % and 36.7%, respectively, as shown in Table 3.2.3. These numbers, especially in Minia, are higher than the national average of 28.3%.

Distribution System of Agricultural Produces

(1) Cereals (Wheat and Maize)

Aish Baladi which is Egyptian local bread made of wheat produced in winter and maize in summer is the staple food of Egypt, so wheat and maize are the very important main crops in Egypt as well as the Project area. Distribution structures for these main crops are regulated by the Government, and they are traditional. Farmers used to ship their products to general cooperatives and specialized cooperatives; however, at present, they are shipping their products through traders or by themselves to the BDAC (village bank) because the MALR reformed their agricultural distribution system. MALR strengthens the role of the BDAC instead of cooperatives in terms of wheat distribution. The BDAC has enough storehouse, storage and collection places for wheat. Storing of wheat takes three to four months from collection to shipment. The quality of wheat can deteriorate during storage at the collection places because it is mostly stored in open spaces.

(2) Horticultural Crops (Fruits and Vegetables)

The distribution of fruits and vegetables is based on traders and wholesalers. In Assiut city, there is a large wholesale market. The local government prepared the land and warehouse in the market, and they provide these facilities to wholesalers. On the other hand, there is no wholesale market

organized in the Minia Governorate. In the city, there are some markets which combine retail and wholesale.

Wholesale margin is around 20 percent, the first middlemen with 5-10 percent, the second middlemen 5-20 percent, and retailers with around 25 percent. Margin rate becomes low when supply exceeds demand, and transaction timing is late. Mostly distributing products in the Project areas are tomato producing in winter and summer, egg plant in winter and summer, cucumber in summer, and okra in summer as vegetable fruits, with onion in winter and summer, potato in winter and summer, garlic in winter, sweet potato in summer, and taro in summer as root crops.

There is a specific distribution route for export. The first middlemen select and purchase products, and they sell them to agro-processing companies and/or exporters. Sometimes, they use the second middlemen. This distribution includes grape (raw), pomegranate (raw), garlic (raw), and onion (dried powder). Producers of these products are concentrated in specific areas. These areas are gradually being formed as special production areas at the village and district level.

(3) Medical and Aromatic Crops

Minia and Asiut Governorates have the most suitable climate for planting medical and aromatic crops in Egypt. Farmers in these areas grow funnel, cumin, anise, etc. in winter and basil, jojoba and hibiscus in summer. Distribution of them are conducted by the traders, who come to buy from the field and/or come to make contract farming. These medical and aromatic plants are planted still in the limited small scale areas except at the New Land. However, some of them such as marjoram and basil are planted in the wide area in the specific regions of the Governorates. Small scale farmers are widely dispersed in the areas and individually sell a small amount of production to the traders. Farmers usually dry their products before selling.

Project Governorate: Minia

The Minia Governorate is situated between the Beni-suef Governorate in the north and the Assiut Governorate in the south. The Governorate is characterized with its rural style. Minia is known as the beautiful bride of Upper Egypt. The governorate capital, Minia city is as far as 250km from Cairo. The total area of the Governorate is 32,279km^2, out of which 2,412km^2 or 7.5% is an inhabited area. There are 9 Districts, 70 local units / townships, 342 villages and 1,429 hamlets in Minia. Population per village in 2006 is estimated at 9,876.

Wheat and berseem are dominant crops in winter season. These cultivated areas were 212,371 feddan and 109,560 feddan, respectively, and those two crops accounted for 80 % of the total cultivated area of winter crops. Regarding summer crops, Maize (white) is dominant, of which the cultivated area was 246,415 feddan. The share of Maize was 67 % of the total cropped area of summer crops. As for permanent crops, Sugarcane and fruit orchards are dominant. The areas used for these crops were 38,769 feddan and 29,614 feddan, respectively. The cropped area of cotton has decreased recently because of a downward trend in international value. During the autumn season, potatoes were dominantly produced in 29,643 feddan of farmland. There are specific areas producing strategic crops, which are non-traditional horticulture crops to bring cash income to farmers.

- Onion and Garlic: Main production area is northern and southern districts.
- Grape: Main production area is northern districts
- Potato: El-Minia district is dominant production area.

- Sugarcane and sugar beet: Main production area is southern districts.
- Vegetables: All districts produce vegetables. Dominant vegetable is tomato.
- Medical and Aromatic plants: All districts produce medical and aromatic plants. Dominant plant is coriander.

The net income of wheat, berseem and maize is LE 1,634, LE 1,759 and LE 277 per feddan, respectively (land rent is included in the production cost). Garlic, which is expected to earn LE 6,624 in a feddan, is the most profitable vegetable. Net income of tomato, the most common vegetable, is estimated as high as LE 6,240 in winter and LE 7,285 in summer. Net income of medical and aromatic plants varies widely by crop, for example LE 8,179 for marjoram, LE 2,979 for coriander and LE 1,165 for fennel.

Project Governorate: Assiut

The Assiut Governorate is situated between the Minia Governorate in the north and the Suhag Governorate in the south. The governorate capital, Assiut city is as far as 400km from Cairo. Assiut is locally and regionally recognized as the commercial center of Upper Egypt. It is a medical hub for all Upper Egypt governorates and almost the only alternative to Cairo. Assiut University is one of the first three universities established in Egypt, after Cairo and Alexandria universities. The total area of the Governorate is 25,926km^2, out of which 1,574km^2 or 6.0% is an inhabited area. There are 11 districts, 65 local units/townships, 256 villages and 888 hamlets in Assiut. Population per village in 2006 is estimated at 9,895.

Wheat and Berseem are dominant crops in winter season. Those cultivated areas were 164,328 feddan and 83,690 feddan, respectively, and those 2 crops shared 83 % of the total cropped area of winter crops. Regarding summer crops, Sorghum and Maize (white) are dominant, of which the cultivated areas were 105,821 feddan and 88,926 feddan, respectively. The share of those 2 crops was 67 % of the total cropped area of summer crops. As for permanent crops, fruit orchard is dominant, whose area was 32,874 feddan. The cropped area of cotton has been decreased these years, because of a downward trend of the international price. During the autumn season, onion and potato are produced. There are specific areas producing strategic crops, which are non-traditional horticulture crops to bring cash income to farmers, as shown below.

- Tomato: North and central districts produce tomato dominantly.
- Okra: Okra is produced in the Assiut district dominantly.
- Cowpea: Cowpea is produced in the Abo Teag district dominantly.
- Watermelon and Melon: Northern districts produce watermelon and melon dominantly.
- Taro: Taro is produced in the Dayrut district dominantly.
- Pomegranate: the southeastern part of Assiut is a center of pomegranate production in the country (share of production in the country was 87% in 2008).
- Citrus and Mango: Southern part of Assiut produces citrus and mango dominantly.
- Basil: Basil is first among the medical and aromatic plants in the governorate and produced in the Abnoub District dominantly.
- Fennel: Fennel is second among the medical and aromatic plants in the governorate and is produced in the Man Floot district dominantly.

The standard crop budget of major medical and aromatic plants, vegetables and fruits in the Assuit governorate is shown below. The net income of the medical and aromatic plants ranges from

LE3,000 to LE6,000 per feddan. In the case of vegetables, the net income is LE1,300 to LE7,400. Onion, garlic and potato are high return vegetables. The net income of tomato, the most common vegetable, is LE4,700 in winter and LE4,800 in summer. The net income of fruits varies widely by crop. One feddan of banana can give the highest return as LE11,000, and olive can give only LE1,000. Among the important fruits, the net return of pomegranate, grape, and mandarin is LE6,500, LE6,000 and LE5,200, respectively.

Participatory Workshops for Situation Analysis

Several workshops were held to capture the issues of the small scale farmers in the course of the Study. The first stage is to select the "usual village" and "potential village" based on the situation analysis at the District level of each Governorate as mentioned in the Study Approach. The second stage is the workshops to be held in the usual village and the third stage is to select focused crops and the offering of workshops in the villages of the focused crops. At the Governorate and District-level workshops, village selection was carried out. The criteria for selecting a candidate for "Usual Village" are described by the participants as (1) No projects found in the village, (2) Capacity of the village is weak, (3) Farmers possess small holding (ownership) in the village, (4) Agricultural holding (ownership) is separated, (5) The village has little income and does not have any agricultural projects before, (6) Lack of skilled labors, (7) A village which has the ability to absorb new ideas, (8) Unemployment rate is high., etc.

A series of village-level participatory workshops were held at the "Usual Villages" representing 6 regions of the Minia and Assiut Governorates. Problem analysis was conducted at the workshops and for an integrated result of the analysis. "There are no job opportunities" got the highest priority, and then "Farmland size is small" at village-level workshops. The priority of "Small scale farmers cannot sell at good price" was not high and that is because most of the participants were landless.

Based on the survey of potential villages and the sector survey, the Study Team held meetings with the Governorate and District officers in each Governorate and chose garlic, potato and onion in Minia and tomato, basil and pomegranate in Assiut as the focused crops. Then the Team requested the Governorates to select the major "Potential Villages" which are the centers of production and to assemble about 20 stakeholders including farmers and traders through village agricultural cooperatives to have participatory workshops. The following are the identified issues:

Focused Crop	Priority issues at problem analysis of the villagers of the focused crops			
	Input	Production	Post-harvest	Sales /Marketing
Garlic	irrigation costs	shortage of growing information and pesticides	need to keep green and no cold storage	the small amount of purchase by exporters
Potato	The price of seeds	shortage of water, the quality of imported seeds and pesticides	-	no exports
Onion	The price of pesticides	the quality of seeds, the temperature (too low in January and too high in August)	much loss	no exports
Tomato	The price of pesticides	the quality of seedlings	much loss and no processing	too much product at the same time
Pomegranate	The price of pesticides	frequent pests	no cold storage and no processing	no processing and control by the companies
Basil	The price of fertilizer	no promotion policy by the government	loss through drying	no information on international prices

Key Issues: Constraints and Potentials

(Land Holdings)

According to statistics from 2005, the share of small scale land-owning farmers with less than 3 feddan (1.26ha) of arable land reaches 86.6% in Minia Governorate and 89.2% in Assiut Governorate. Among them the majority of small scale land-owning farmers have less than one feddan (0.42ha). The land holders with less than one feddan in Minia and Assiut comprise 60.7% and 76.9% respectively. Average land size of land owners with less than one feddan is 0.36 feddan in Minia and 0.23 feddan in Assiut. Though we define small scale farmers as those with less than 3 feddan, we should recognize the actual size of land holdings as the most of the farmers have less than one feddan. Even the majority holds less than 0.5 feddan on average. There are no statistics regarding landless farmers or laborers, but estimates are about 20% of farmers in Upper Egypt.

Most of the small-scale farmers are cultivating traditional crops such as maize, wheat and berseem and do not grow profitable horticulture crop very much. They also first allocate the produce for their consumption and then sell the surplus. On the other hand, there are farmers cultivating commercial crops although their cultivated land is very small. In El Egal El Bahry village, the number of farmers cultivating pomegranate was available. The share of pomegranate farmers with less than 0.5 feddan accounts for 38% of the total pomegranate farmers and 12% of the total amount of land owners with less than 0.5 feddan. It indicates that farmers would choose to go into cash crop cultivation instead of cultivating traditional crops based on economic benefit. If that is the recognition of the farmers, it is necessary to introduce a root vegetable in the broad sense collectively, and to demonstrate the feasibility of cultivating vegetables in small land using green houses and other technology.

(Agricultural Marketing: Demand side (Private Companies, Middlemen and Consumers)

The Study Team carried out a questionnaire survey to the ordinary consumers in Cairo, Minia and Assiut cities (total 141 persons). The consumers were asked which aspects they care about when choosing vegetables and fruits to buy. The most frequent answer was freshness of the products. The second aspect was price. In all the cities, the consumers answered that more than 90% of the consumers buy vegetables and fruits mostly from local markets. The local market is considered for consumers a good market to be able to get fresh products at a fairly cheaper price. A consumer pointed out that the fast cycle of selling vegetables and fruits at local markets keep the products fresh. The questionnaire indicated that the environment of the local market is not always satisfactory with the consumers, as the markets are crowded, dirty, etc.

On a question which asked whether consumers prefer to buy either packaged products or products without packaging, there was not a big gap in preferences between packaged products or not. Those who prefer to buy vegetables and fruits without packaging say that it is easy to choose the products by themselves without packaging. Also they point out the high price with packaging. Some consumers also say that the packaged produce loses freshness, as they are not sold easily. On the other hand, the consumers see the good point about packaging, as it keeps products clean.

As for organic products, the consumers may have interest in the organic products, but they cannot find them easily at the market. Also, high prices are still an obstacle for consumers to buy organic products. The domestic market for organic products is not yet developed, but could have potential in future as people start caring more about healthy foods. In Egypt as an organization called Egyptian Center of Organic Agriculture (ECOA) has been established to certify the organic produce, efforts for organic farming has been prevailed.

The Study Team visited a few large-scale vegetable companies in Cairo to investigate their needs. These companies are found to care most about the safety of food, which includes interest in organic products. While the middlemen think about quantity and price, these companies, especially export companies, have the most interest in traceability of the products. Then their concern is connected to secure a stable supply of products, but their procurement of products depends on the local traders and wholesale market, where the traceability becomes less expected. These companies have a high interest in making contract farming with small scale farmers, provided that they are well organized.

(Issues on Marketing Process):

Poor attention to post-harvest during transactions: storage loss for wheat is a big problem. BDAC keep the wheat production for 3-4 months in flatland, then severely devalued by temperature and drying because BDAC do not have adequate warehouse facilities. Tomato is devalued since it is distributed with *Kafas*, wooden baskets, and piling up *Kafas*, inside which the tomato is squeezed. Vegetables are likely to lose their freshness for a short time by exposure to extreme high temperatures which can cause drying. In addition, there are no cold storage facilities for onion and garlic so germination is one of the main causes for their deterioration. Regarding seed potatoes, middlemen and traders use cold storages owned by specialized cooperatives in Minia. Also, many impurities mix with herbs and medical herbs when they are dried.

Multiplicity of traders without value addition: distribution starts from first middlemen to local wholesalers, and then wholesalers deal with second middlemen, and finally, second middlemen deal with retailers and consumers. There are usually four levels in the distribution system, and transaction margins at each level contribute to low profits for farmers.

Deficiency of marketing information system and limited benefit to farmers: the causes of price fluctuation of fruit and vegetable are the amount of supply, season aspects including harvest timing and religious calendar, transaction levels, quality, transaction place (Delta region or Upper Egypt region), and timing. Prediction for prices of fruit and vegetables is difficult even for traders. According to wholesalers, the prices are affected by supply amount rather than seasonal factors. If farmers get the market information properly, they will be able to select which crops they produce, but at the same time, they must improve their technical skills. Farmers tend to produce traditional crops (wheat, maize, and berseem) for subsistence, and also sugar cane which has governmental official price rather than producing high price expected crops. This situation indicates that farmers avoid high risk, even though they have the opportunity for high returns. On the other hand, if the farmers can obtain the price information and selling places become sure like onion, garlic, potatoes and pomegranate, eagerness of farmers become higher. When farmers are informed as to the higher income that can be obtained, motivation of farmers becomes higher.

Weakness and decline of small farmers' marketing organizations: due to the liberalization of agricultural marketing, the role of specialized cooperatives has shrunk. Consequently, general cooperatives are also unconcerned with marketing. There are some movements that various organizations take part in, such as cooperative pre-members, traders, practical farmers, CDAs, and NGOs involved in marketing of fruit and vegetables, instead of comprehensive cooperatives and specialized cooperatives. Collective shipping for specialty crops has been attempted and collective jojoba and potato shipping has already succeeded with local traders. On the other hand, marketing groups organized by NGOs and CDAs struggle to continue their activities without support from outside donors. From the buyers' point of view, scheduled shipping with stable prices and quality is necessary, but it is not easy for producers to achieve these points. Members of farmers' groups must

be concerned with maintaining good relationships with traders.

The weakness and underdevelopment of physical conditions, organization, facilities and marketing services for the vast majority of wholesale and retail agricultural markets: there is a wholesale market spanning 5 feddan located in a suburb of Assiut. Visitors, typically numbering in thousands of people a day, cause congestion with large tracks, pick up tracks, and carriages. Therefore, traffic is stacked and it takes a lot of time to carry the products out from the market. By contrast, there is no wholesale market in Minia. Retiles and wholesalers are mixed up in a small shopping street located in the center of the city. Product distribution is inefficient, and there is also a lack of hygiene. There is an urgent need to construct wholesale market facilities in Minia. Fruit and vegetables are sold on roadside in the center of districts and villages. This situation is not good for hygiene. For example, bacteria coli form and salmonella are encouraged to multiply by the feces of cows, donkeys, and other life forms. These bacteria can possibly attach to agricultural products, and this makes agricultural products perishable quickly.

Agriculture

(Crop Productivity)

In general, crop productivity in Egypt is very high comparatively. According to the FAO statistics database, the yield rate of wheat was 5.6 - 6.5 ton/ha during 2008 to 2010, which was more than double of the world average. Also the yield of maize was 7.3 - 7.9 ton/ha during 2008 - 2010, which was about 150 % of the world average. Yield rates of other major crops, such as rice, sorghum and sugarcane, are also much higher than the world average, because of the rich in irrigation water, solar radiation and temperature. However, the yield rates of vegetables, such as cucumber, watermelon and tomato, are not very high compared with the world average. Those yields in the 3 year average were 69 %, 104 % and 117 % of the world average, respectively. The productivity of these vegetables can be improved in Egypt.

(Greenhouse)

In New Land and suburbs of Minia city, there are some greenhouses to produce seedlings of vegetables and vegetable crops. Greenhouse cultivation has some advantages, such as high land productivity, control of harvest season, and easy quality control. The number of greenhouse reached413 in Minia Governorate in 2008. The standard size of the greenhouse is 9m width, 60mlength and 3m height. The 540 m^2 or about 3 karat greenhouse costs LE 18,000 to LE 20,000. Such a high initial cost may be a deterrent for small scale farmers, although it would enable them to earn much more from their land.

(Off-season or High-price Season Production of Horticultural Crops)

As the warmer Upper Egypt region has the advantage of earlier harvest of horticultural crops, there is a chance to meet high shipping prices. In general, the harvest time of winter vegetables in the region is one month earlier than the Delta region. In the case of the Nile potato, the price in early November is as high as 2,400 LE/ton, and decreases to 600 LE/ton in December. The cropping pattern and cultivation method of horticultural crops focuses on the early harvest, for example, introducing early-mature varieties, using greenhouses or tunnels, using transplantation of seedlings, and shifting the planting season. Vegetables are cultivated in this area is mainly in the winter season, while very hot weather in the summer season is an obstacle to vegetable growth. As prices of vegetables fluctuate significantly by season, summer vegetables could bring much higher income to farmers than winter vegetables.

Use of Low-marketable Products

Agro-processing could be profitable for producers in terms of more added value, preservation of high-season harvests, and use of slightly damaged products. In the case of the tomato, producers sometimes cannot sell their product at the peak harvest season. One of the countermeasures against such short-run overproduction is agro-processing of source, juice, dried products and so on. In case of fruits, damages on fruit surfaces make market value very low. Such fruits are acceptable for material for juice, jam and other processed foods.

(Crop Diversification)

New or unique crops or varieties always have the possibility to bring high returns to initial producers. The agricultural extension service agencies keep attention on such information in collaboration with MALR research institutes, universities and private firms, and support farmers who intend to produce such crops.

(Expansion of Cash Crops under the Intercropping System)

The intercropping system of cash crops with traditional crops is a possible way to generate farm income for small scale farmers. Most of farmers plant only traditional crops, such as wheat, maize and berseem, to meet home consumption and to sell surplus at stably low price. They hesitate to take risk in planting cash crops in their limited farmland. If such farmers employ intercropping system of summer vegetables or medical/aromatic plants with maize, they can fulfill their staple food needs and generate additional cash income.

(Possibility of Utilizing Organic Fertilizers and Bio-control)

The small scale farmers have been razing the issue of high production cost. Especially in this season affected by the revolution in 2011, the price of chemical fertilizers skyrocketed as 3 times as the price of last year, so the poor return by the rise of production have become clearer. According to the Farm Household Survey, 43 % of 83 wheat producers use organic fertilizer in Minia Governorate. Farmers should increase the application rate of organic fertilizer, such as compost made from crop residue and animal dung, to save cash expenditure for chemical fertilizer. Besides, some bio-fertilizers are developed and produced by private companies under technical assistance of universities and research institutes. The agricultural extension service agencies will collaborate with MALR research institutes, universities and private firms, which have great knowledge on this field. Furthermore, this is a potential strategy for producing organic farm products, and target urban markets. Linkage with the private sector would be important.

The problem of pest damages with chemical resistance is also serious. Specially, Tuta Absoluta, or known as tomato leaf miner, has been spreading in Mediterranean countries including Egypt. It is reported the moth completely damages tomato within 3-7 days after hatchling larva. Also the moth is going to damage all Solanum crops such as potato, aubergine, capsicum, etc.

In the Pilot Project for the intercropping demonstration for summer tomato, bio-control against pest was confirmed effective. Especially against Tuta Absoluta, the prevention measures by the growth stage of the pest was verified effective, namely, parasitizing to the eggs by Trichogramma, calcification of protein at larval stage, and inhibition of mating by pheromone at the adult stage. In the Pilot Project, the material such as anti-insect and Bacillus thurigiensis (Bt) produced by Central Lab of Organic Agriculture, but they are costly due to transportation from Cairo. The Lab has its branch in Abnoub District, Assiut Governorate, so all the materials for bio-control should be produced

in Assiut and constructed urgently under supervision of the Lab researchers.

(Distribution of Agricultural Inputs)

The government agricultural extension service is usually limited for major field crops only. As the marketing channel of production materials of horticultural crops is limited, small-scale farmers cannot access easily to the marketing system. In fact, many inputs for the demonstration farms were procured from reliable traders, producers or research institutes located in outside of the Governorate. Access to various farm inputs shall be improved to common farmers. Also in order to lower the prices of materials for bio-fertilizer and bio-control, it is necessary to improve distribution system.

Farmers' Organization

Historically the first agricultural cooperative in Egypt was established in 1910 as a mutual cooperation of the farmers. Then the agricultural cooperatives were restructured as an agent to control farmers in order to execute the agricultural production plan of the Government from 1950's to 1960's. Liberalization policy for production and marketing started endorsing from late 1980's and the farmers became free to choose what to cultivate and started selling their produce to private traders. Under such policy prevalence, today the agricultural cooperatives have been circumscribed in their duty of distribution of agriculture inputs and administration of farmland. Due to the legal framework of dealing in public money and the accountability of spending public money, the commercial activity of the cooperative is defined more by risk aversion rather than risk taking.

Revitalization of the agricultural cooperatives to contribute to the welfare of the small scale farmers has been an issue under the prevalence of the global economy, which is widening the disparity between urban and rural economy. MALR has prepared "Strategy for the Development of Agricultural cooperatives (2002-2017)" to urge the change of the cooperatives in shape and content to match the transformed economy. In the Pilot Projects, we have tried to create added value and job opportunity in rural area through activating the village agricultural cooperative. Following aspects were observed:

- Village agricultural cooperatives have assets and skilled staff and also deal with distribution of agriculture inputs. Hey have a potential to deal with the agriculture produce, as well.
- Involvement of the cooperative board members was weak (cooperative staff was mainly working). Board members are rather honorary post representing the big families in the villages and not necessarily business-oriented persons. Hence there are not much action to activate the savings of the cooperative or collecting share value from the members to invest in business.
- The revenue from the agro-processing is supposed to manage in a special account. This is due to the anxiety that if the revenue is kept in the general account of the cooperative, it would become difficult to withdraw it as it requires the approval of the board members and the board members indifferent in the business would not easily approve the withdrawal of money. That may be an obstacle to the business.
- On the other hand, the organization of board members was taken into consideration the social balance in the village, i.e. each big family in the village was represented as a member of the board.

The current village agricultural cooperatives are rather a part of the traditional side of the village livelihood. In order for the village agricultural cooperatives to be an agency of activating rural economy, the cooperative should become more business oriented organization. It can be said that the financial capacity of the village agricultural cooperative is generally weak. Whereas, according to the actual performance of the village cooperatives in dealing with agricultural inputs in fiscal year 2009 in Minia, the sales of wheat seeds, chemical fertilizers and pesticides by all the village

cooperatives reached to LE6.2 million, LE163 million and LE0.8 million respectively. Average dealings per village cooperative is calculated at LE18,000, LE477,000 and LE2,000 respectively. The financial ability of the village agricultural cooperative is not so strong, but they deal with the cash flow valued to hundreds of thousands of LE annually. As extension of such activity, it can be said that the village agricultural cooperative has enough potential to establish agri-business such as processing.

There are other organizations like CDA (Community Development Association) i.e. NGO to be registered to the Ministry of Social Solidarity. CDA is seldom established for agriculture purpose but for other social activities. Shams Project by USAID / CARE or project by CEOS (NGO) used the existing CDA adding the collective work for agriculture business, namely contract farming. Including the new establishment of the organization, they could be a body to run business to be assisted by the external donors.

Agricultural Finance

There are three major problems about the current agricultural finance system: high transaction cost, limited access to loans, and complicated loan procedures. According to farmers who borrow the money from the BDACs, they have to pay transaction costs on top of the usual interest, such as the cost of filing and documentation. If farmers take the loan for the summer crop and winter crop, their interest rate will be 11% in total per year; however, the total cost seems to reach around 14% including other extra costs. One of the most important problems is limited access to loans of agricultural activities. Transparency of loan procedures is also a problem because the procedures and their contracts are very complicated. The application form has about 30 pages and some farmers cannot get the contents of agreement with the bank. There are farmers who do not even know how much money they will pay back.

Although there are constraints about agricultural finance, some possibilities are recognized to improve the situation. For example, there are Community Development Associations (CDAs) in many villages. Their activities mainly support women and farmers by providing small amounts of loans. One of the main characteristics of these associations is to target landless farmers and women who cannot get access to the PBDAC. Also, the Social Development Fund does the project called “Comprehensive Agricultural Development Project” in order to improve farmers’ livelihoods. Their interest rate is usually lower than the PBDAC. Furthermore, one village cooperative utilized the fund called the “Agricultural Research and Development Fund” and started to provide loans to farmers directly.

Other Donor Activities in the Governorates

Major donors are IFAD, Coptic Evangelical Organization for Social Services (CEOSS, NGO), USAID/CARE, and SFD/AfDB. FAD and CEOSS are undertaking on-going projects. USAID/CARE supported projects have terminated and SFD/AfDB is going to start the project in the near future. The following are the lessons and aspects that this Project should take into consideration:

- Outputs of APIP (IFAD) such as crop production technologies in the research center, Rural Women Center in Minia are still useful and applicable to the activities for rural development.
- Credit lines (to be) facilitated by IFAD and SFD/AfDB could be a source of funds to implement the activities to be formulated in this M/P.

- The projects have had the cases of establishing new farmers' organization and working with existing organizations. This indicates that if the existing organization has a mission, the experience accumulated in such an organization could be utilized for the development activities, while establishing new associations would be time consuming and the height of external support should take into consideration the capacity of the association's sustainability after its termination.
- The concept employed by the above-named projects for improving marketing is to skip the middlemen (traders) by connecting exporters or companies directly to small scale farmers in order to give more income share to them. Although there has been no incident heard, potential conflict with middlemen may have to be taken into consideration.

Master Plan

Development Framework

This Master Plan (M/P) aims to contribute to the rural development of Minia Governorate through improving marketing of agricultural produce for small scale farmers, namely activities such as improvement of production, including the introduction of new varieties, improvement of post-harvest, and adding value by processing. All this will be planned based on the needs of market. Then the Development Goal of this M/P is set as "Income of small-scale farmers is increased through improving marketing of agricultural produce". Also from this concept of the M/P, the M/P will contribute to the strategic goals of "Increasing the competitiveness of agricultural products in local and international markets", and "Improving the living standards of the rural inhabitants, and reducing poverty rates in the rural areas" in the SADS.

Development approaches to realize the development goal is considered based on the situation of the small-scale farmers in the Project area and the future projection of agriculture sector in Egypt in accordance with the concept of this M/P.

(Situation of Small-scale Farmers)

Through the survey in the usual villages, focused point was the awareness of the small-scale farmers with less than 1 feddan, who are the majority of the land owners. Most of the small-scale farmers are more like subsistence farmers cultivating only stable food such as maize and wheat. According to the survey, farmers who hold tiny farmland think that they cannot cultivate profitable horticulture crops and even if they do, they could do only for home consumption. Their interests are rather more in off-farm job or animal rearing than crop production.

As for the potential villages, many farmers are also with tiny farmland and subsistent. From this point of view, there is no clear difference between usual villages and potential villages categorized by the officers in the Governorates and Districts. But there is a significant point in the awareness of farmers in the potential villages, namely in the potential villages, there are farmers whose farmland is tiny but venture into horticulture crop from the economic point of view.

It is an important option for small-scale subsistent farmers to seek for off-farm job opportunities to increase their income. In fact, in Nazlet El Ablak village defined as usual village, three-fourth of the land owners live outside the village because many small-scale farmers gave up to earn from farming and sold their land to get money to invest in education of their children. However, off-farm job opportunities are not stable as the unemployment rate of the country is over 10%. Therefore, increasing profitability of the land though their land is small can still be an important option to increase income of the small-scale farmers.

As the examples of the specialty crop areas show, it is expected that the area of specialty crops would be developed by increasing the number of farmers who will engage in horticulture crop one by one. Promoting profitable horticulture crop would make such movement in the village. At least farmers would be able to sell their produce in their area as the vegetables are imported from outside the villages in many villages. Since the population growth rate of Egypt is still high and the rural population is big, the concept of local production-local consumption is so vital.

As for the existing specialty crop areas, it is required to strengthen their competitiveness by improving their production, post-harvest treatment and selling based on the needs of the markets and it needs to provide the assistance to the small-scale farmers to engage in profitable horticulture crop as an option of increasing their income.

(Future Projection)

The development approaches are considered also referring to the future projection of the agriculture sector. In the Sustainable Agriculture Development Strategy toward 2030 (SADS), the population of the country in 2030 is projected at 106 million, which is a 38% increase from the 77 million living in Egypt in 2007. The population growth will increase the demand for food, but also cause a decrease in land per capita. Though the Government of Egypt is implementing a horizontal expansion policy to reclaim new land to maintain the land per capita in the future, narrowing farmland per capita, especially in old land, would still remain as a threat. Profitability per land unit would be a crucial issue in the future, and the farmers should cultivate and create opportunities for profit, not only from production on the farmland, but also from the stages in the post-harvest, processing and sales. Diversified, intensified and quality crop production with high value of produce would be required.

(Development Strategy)

Considering the above situation of the small scale farmers and future projection, it would be required to increase the profitability per land to face the tight land resources. It is, therefore, required to promote agriculture with higher value production to meet the needs of markets, namely promoting horticulture crop, quality improvement, crop diversification, agro-processing etc. would be required. With these backgrounds, we would set the development strategy to increase the income of small scale farmers through improving marketing of agricultural produce as: “Small scale farmers producing, processing and selling agricultural produce at high value according to the needs of markets in cooperation with their peers”. It needs to assist small scale farmers to increase their income by engaging not only in production but also in processing and selling.

Under the strategy, following tactics are set according to the stage of value chain, namely sales, post-harvest, and input / production.

Sales:	acquire market information to utilize for farming and sales / expanding market channel / adding value to produce
Post-harvest:	adding value to produce / reducing post-harvest loss / improving quality of produce
Input/Production:	improving quality of produce / harvesting in off-season / promoting profitable crops

It is proposed that the Government administration will assist the farmers in awareness creation (production for sale), cooperation, technology improvement (extension), improving access to finance,

etc.

Improving the distribution environment in the region would also be effective to improve the marketing by the small scale farmers, namely establishing a wholesale market will improve the efficiency of the distribution system of agricultural produce, and also the market would contribute to pricing the produce, as it would be a signal to the producers and traders for their transactions. "Improving the efficiency of distribution and pricing" is therefore set as another development strategy. However, the responsibility for establishing and operating a wholesale market is not for MALR but for the Governorate. In this M/P, therefore, refers to the infrastructure improvement as a related project.

(Timeframe and Targets)

Following the SADS 2030, the target year of the M/P is set as year 2030 and the starting year of the M/P is set from 2013. The Short Term and Mid & Long Term are respectively set as 5 years (2013 – 2017) and 13 years (2018 – 2030). The targets shown on the table will be set as the output / outcome of the development projects described in the following sections.

Basis of the Project Governorates

Item	Minia	Assiut	Total (Average)
No. of Village Agr. Cooperative	342	250	592
No. of Farmers with less 3fed(2005)	250,340(86.6%)	339,466(89.2%)	589,806(88.1%)
Area of less than 3fed holdings	177,888fed (43.0%)	138,146fed (42.5%)	316.034fed (42.8%)
Income of Traditional Farming(*): Land owning farmer(0.5fed)	LE3,300/year	LE3,100/year	LE3,200/year

(*)Summer: maize; winter: wheat, berseem: the average land holding with less than 3 fed is 0.54fed, hence 0.5fed was applied as standard.

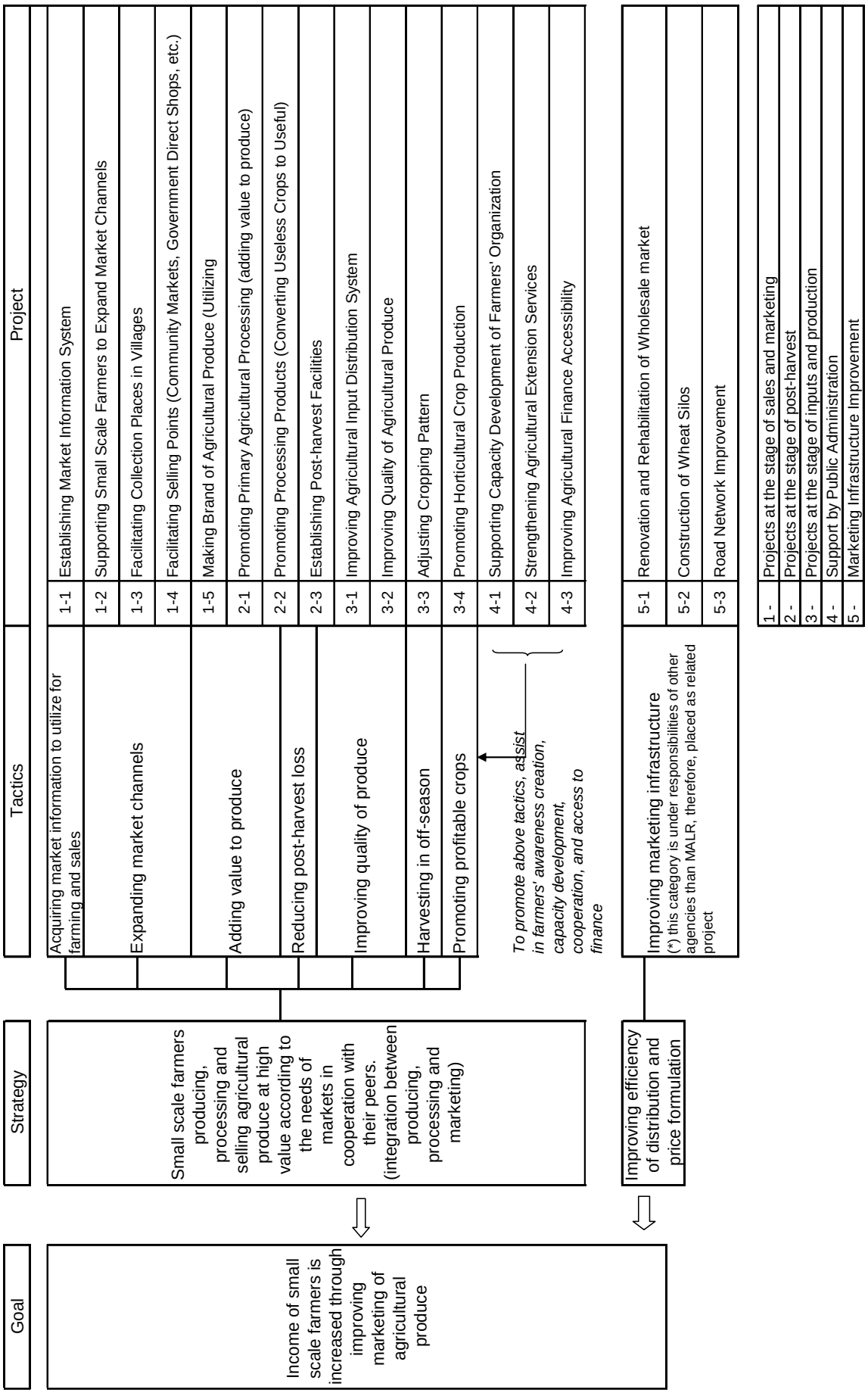
The Targets of the M/P

	Short Term Plan	Mid & Long Term Plan
M/P Target Year	5 Years (2013－2017)	13 Years (2018－2030)
Targets	• Support 20 village agricultural cooperatives • Guide 1,100fed (2,300farmers) for value added agriculture • Support 25 post-harvest and agro-processing facility establishment (create job of 144 people)	• Support 100 village agricultural cooperatives • Guide 4,160fed (8,800farmers) for value added agriculture • Support 78 post-harvest and agro-processing facility establishment (create job of 432 people)
App. Project Cost	LE19,000,000	LE54,000,000
Income Increase	Ave. 900LE/year/0.5fed (30% increase)	Ave. 1,100LE/year/0.5fed (34% increase)

Formulation of Development Projects

Under the above development strategies and tactics, development projects are formulated. The development projects are based on the countermeasures to the issues on present situation categorized according to the stages of input / production, post-harvest and sales. The projects are organized along with the development strategies and tactics set to realize the development goal of the M/P.

Development Frame



Improvement of Sales

1-1 Establishing Market Information System

This project is to establish a system to collect market information useful to the small scale farmers and disseminate in efficient way to the small scale farmers by the administration. This activity is planned to combine with the Mobile Extension Services, which has been launched since 2011 between the ARC / CAAE (Central Administration for Agricultural extension) and the private mobile companies. At the Governorate level, the Agricultural extension Sector has started collecting the market prices of major crops in selected local markets since 2011. Collection of price data can also be delegated to the initiative of the Agricultural extension Sector.

In mid and long term, establishment of information center will be considered. The information center can serve as a library of the farmers to seek for information they want. Through the information collection and dissemination activities, the database will be accessed by the users through PCs. And the Center will be equipped with computer units, so that the users come and look for necessary information they want through the internet. The Center would be established at governorate and district levels to easily reach out to the farmers in rural areas.

1-2 Supporting Small Scale Farmers to Expand Market Channels

Expanding market channels for small scale farmers would help them for fair negotiation to sell their produce and also give the possibility to sell their produce at good prices. To expand the market channels of small scale farmers, it is proposed to revitalize agricultural cooperative for marketing. NGOs either as independent or in cooperation with international donors have been implementing to organize a farmers' association to connect them to buyers, such as exporters. But an agricultural cooperative is still the key agent for the Government. Therefore, the Government support to the farmers should start with cooperative.

If the village agricultural cooperative tried to engage in collective shipping of agriculture produce, they would need such arrangement for success as securing where to sell, i.e. contract farming, giving low interest finance to farmers as the finance by the traders / middlemen to the farmers prior to cultivation has been prevalent. Food companies are eager to secure the stable supply of safe produce. As the small scale farmers are the majority of the agricultural producers in the whole country, the companies have an interest in engaging contract farming with small scale farmers. Hence it is proposed that the village multi-purpose agricultural cooperative also be the window of the private companies to seek for the group of farmers to get into contract farming. It is also proposed to establish a fund for price stabilization to make the farm-gate price consistent over the years.

In the mid and long term, it is proposed to develop an advanced cooperative to get into more variety of business, including grading, packaging. A center for Post-harvest and Marketing run by the cooperative is proposed. This would be a specialized cooperative activity or union level of District cooperatives.

1-3 Facilitating Collection Place in Villages

To help small scale farmers organize themselves to collect their produce and sell together, it is proposed to furnish a collection place in the village. Basically, farmers would not mix up their produce from others. But for small scale farmers, the amount of their produce would be small so that when they gather at one place with their produce, the traders could take the bulk of produce. Collecting their produce at one place, the small scale farmers could sell their produce more easily to the traders. The place can be used for a community market where local women can get some

vegetables from their village and sell to the villagers. Such a collection place will be set up using the space of a village cooperative if available. If not, cooperation with the Governorate/local unit would be required to acquire the land for it. There are already existing collection place run by private sector. They rent a corner of farmland along the main road and use the place for collection and shipping of the agricultural produce. In this M/P, it is planned to establish the collection place to be managed by the village agricultural cooperative along with the above activity of expanding market channel for small scale farmers.

1-4 Facilitating Selling Points (Community Market, Government Direct Shop)

Establishing a community market and direct shop is proposed in order to facilitate for selling the produce at the local market. At the villages in which a horticulture crop is not practiced much, the villagers are purchasing vegetables from outside the village. Due to the multiplicity of traders, buying vegetables outside inflates the price of produce. If they can sell the vegetables produced at the village more in the village, the outflow of the cash from the village could be minimized and the farmers trying to cultivate horticulture crops can easily find the place to sell. There are very often the cases that the rural women form a market place for vegetable along the road. For these cases, it is planned to pave the village road, which is also used as a market place in order to improve the hygiene condition so that the sales of the produce there is expected to be better. In case there is a place owned by the village cooperative, that place can be used for the market place by concrete pavement.

As for direct shop facilitation, it is planned to establish a direct shop at village cooperative and district agriculture office and promote the high quality agricultural produce or processing products. There is already a direct shop at Minia and Assiut Agriculture Directorates. Also the District Agriculture Offices have been selling agricultural produce at the office though they do not have specific shop in the office compound. Direct selling at these offices is planned to promote the sales of local produce.

1-5 Making Brand of Agricultural Produce

Farmer's income can be improved by bio-fertilizer and bio-control. The reasons can be summarized as: 1) the yields of crops increase at 20% or more comparing with conventional farming methods prevailed in Upper Egypt, if proper microorganisms are dosed along with the stages of plant growth, 2) demands of bio products (not complete organic products) from traders and consumers increase due to good taste; tomato, potato, etc., 3) input volume of chemical fertilizer can be saved at 50% or more by bio-fertilizer., 4) input volume of chemical pesticide can be reduced by bio-fertilizer.

Even though high quality products, only one problem is not to reflect on prices after applying bio-fertilizer and bio-control. Demands of organic agro-products are increasing in supermarkets in Cairo. For Upper Egypt, organic farming is more costly and difficult on recording by small scale farmers due to inspection and registration by organic farming certification organization. Therefore, it is recommended to promote the category of Clean Agro-produce (less use of chemical pesticide, application of bio-fertilizer and bio-control) by Agricultural Directorates.

To promote making brand of Clean Agro-produce, establishing a standard of bio-fertilizer application, and a management strategy of knowing, understanding, planning, measuring, monitoring, and record-keeping at step of the production process, i.e. adoption of Good Agricultural Practice (GAP) may result in illuminating problems and instructing the appropriate measures for maintaining the quality of food. This will be applied in Mid & Long term.

Improving Post-harvest Processing

2-1 Promoting Primary Agricultural Processing (Adding Value to Produce)

The proposed project aims to add the value of products to sell them by using the preliminary processing facilities for farmers to collect their product from their field, taking into consideration demand and supply. For preliminary processing, such as in pickle making or drying vegetables, various agricultural products as raw materials may be used. It should be considered that many farmers' groups may be required. Also, cooperative support for electing the facilities is required, selecting the agricultural products for yearly facility operation and establishing the farmers' groups. The concept of this proposed project is for farmer to cooperate, process products and sell the produce under the support and instructions of the cooperative.

In the mid and long term, it is expected to make higher quality produce gradually, following the GAP planting and applying the HACCP hygiene control with the area expansion and specialty crops promotion.

2-2 Promoting Processing Products (Converting Useless to Useful)

Tomato is sold vastly in the Project area, and in the season, it is in oversupply, and the price goes down heavily and rapidly. Therefore, farmers do not harvest it and leave it in the field. While in off-season, the price goes up quite high, more than five times. On the other hand, there is damage and a lot of loss at the working stages of harvesting, handling, loading and unloading. It is expected to introduce and extend the time lag for planting as well as install the processing facility to reduce such situations. The concept of the proposed project is for farmers to convert the useless crops to useful produce cooperating with the cooperative. However, it should be taken into consideration to yearly operate the equipment and facility as long as possible, because short operation makes the annual cost high and the benefit low. Therefore, other simple processing such as drying or freezing vegetables should be conducted using the same equipment and facility during the off-season of the target crop.

In mid and long term, it is expected to promote high quality foods and to establish specialty crop areas with the promotion of GAP and HACCP control in target areas.

2-3 Establishing Post-harvest Facilities

In north central Minia and in eastern Assiut, marjoram and basil have been widely cultivated. Farmers have to dry the crops to sell because the traders take dried crops, not fresh. Drying by sunshine requires a large drying area, and if there is no place, farmers share their precious crop field for drying. Drying on the bare ground with direct sunshine causes a heavily lower selling price for farmers by means of a large processing loss and low quality. Also, the distribution channels are very limited and there are only traders to come in village to buy. It is expected for farmers to add to the value by proper drying and simple processing and to sell not only to traders but also to processing companies in Fayum, Cairo and Alexandria. The concept of the proposed project is to improve the distribution channels for farmers cooperating with the cooperative to reduce the loss and add value to sell at a good price.

In mid and long term, it is expected to enlarge the capacity and effectively use the processing facility and expand the cooperative activities. Proposed crops are basil in south eastern Assiut, mint, marjoram in northern and central Minia, and other medical and aromatic plants in specific whole areas in Governorates.

Inputs and Production Improvement

3-1 Improving Agricultural Input Distribution System

This project shall promote use of advantageous varieties and certified seeds and seedlings in production of vegetables, fruits and medical and aromatic plants. At first, advantages of certified seeds and seedlings of suitable cultivars shall be recognized by producers through demonstrations and intensive technical guidance, then distribution system of them shall be established properly. In mid- or long-term, the quality and varieties of vegetable seedlings distributed by some individual producers shall be improved through proper supervision of the government. At the same time, it is recommended that public agencies, such as Agricultural Research Center in the governorate, shall produce and provide quality seeds and seedlings for small scale farmers.

In general, productivity, quality and profitability of horticultural crops differ widely with each producer's technical level in the fertilizer and agro-chemical application method. In the mid- and long term, such farm inputs with appropriate quality shall be accessed by producers at reasonable prices as well as at the right time through proper inspection by the government and support to the distribution system. In the short term, technical guidance shall be strengthened in the field of compost application using crop residue effectively in order to maintain or improve soil fertility.

In order to lower the prices of materials for bio-fertilizer and bio-control, it is necessary to improve distribution system. For example, in Matai District, Minia Governorate , the district director and extension officers have established ‘Bio Shop’ at district level to provide information of organic farming and sell bio-fertilizer and products of safe foods. Furthermore, they coordinate distribution of bio-fertilizer with private farm-input shops at village level. This networking with district extension, bio-fertilizer producer, village dealers and farmers will be one of distribution models. In future, distribution system of bio materials can be constructed by the most efficient and reliable channels from extension officers, agricultural cooperatives, private dealers, or contracted agents.

Tuta absoluta, has been spreading year by year from South America to South Europe, Middle East, South West Asia, North Africa and East Africa since 2009. In the Pilot Projects, the material such as anti-insect and Bacillus thurigiensis (Bt) produced by the Central Lab of Organic Agriculture, but they are costly due to transportation from Cairo. The Lab has its branch in Abnoub District, Assiut Governorate. All materials for bio-control should be produced in Assiut and constructed urgently under supervision of the Lab researchers.

3-2 Improving Quality of Agricultural Produce

This project aims at quality improvement of horticultural crops, as trading conditions of them are strongly dependent on their quality. At first, agricultural extension services shall be strengthened in the field of quality improvement techniques through intensive training for extension officers and demonstration to farmers. In the mid- and long term, the distribution system of necessary materials shall be improved under certain support by the government. On the other hand, producers shall implement grading and sorting of their products to meet market demand, and the government shall support them for the establishment of collective shipping facilities. In the long term, it is recommended that the government shall establish the quality standard of agricultural products to stabilize trading conditions between producers and traders.

3-3 Adjusting Cropping Pattern

This project promotes various cropping types for off-season shipping, because prices of horticultural crops fluctuate significantly by years and by seasons. For this purpose, it is proposed that technical

guidance of new cropping types, for example intercropping of horticultural crops with heat-protection crops, shall be provided to farmers through demonstration farms. Greenhouse and tunnel farming systems are also recommended to be promoted under certain technical and financial assistance. In the mid- and long term, a year-round production system of certain crops shall be established to stabilize their prices.

3-5 Promoting Horticultural Crop Production

This project is to establish strong agricultural extension services of horticultural crops based on market information, as profitability of them greatly depends on demand and market circumstances. For this purpose, the extension service agency shall promote production of high-demand crops and guide crop diversification to reduce marketing risk. In the mid- and long term, producers' selection range of agricultural inputs shall be expanded through proper arrangement of their distribution system. In addition, the agricultural credit system shall be strengthened to improve access from producers of horticultural crops.

Strengthening of the Farmers' Organizations for Improving Agricultural Marketing

Basically, the agricultural cooperatives will be the entrance to the small scale farmers in the villages, as they are supported from the government administration, especially from the General Directorate of Agricultural Cooperatives in the Governorate Agriculture Directorate. Therefore, the capacity development of agricultural cooperatives is primarily targeted. Major present function of the agricultural cooperatives is to collect information on land holding, certificating transfer of farmland ownership and endorsement for farmers to get finance. There are, however, cooperatives whose board members are eager to engage in economic activities. There is also a village cooperative, which has started operating milk processing unit. Assisting the economic activities of agricultural cooperatives can be the target of strengthening farmers' organization.

For the proposed projects under this M/P, there will be occasions to form a group of farmers, such as in demonstration activities, operation of processing facilities, etc. The proposed projects would assist forming a group of farmers at the beginning as an informal group to practice the proposed activities. It is expected that some of successful farmer groups would develop their initiative to be a formal one with clear objectives and prospects of improving their livelihood. This policy of strengthening groups of farmers to be registered associations will provide opportunities for farmers to develop their initiatives, not just make registration their sole objective.

As mentioned above in the project of "1-2 Supporting Small Scale Farmers to Expand Market Channels", it is planned to strengthen the village agricultural cooperative to engage in collection and shipping of agricultural produce. The future direction of cooperative involvement in distribution based on the pilot project experiences should include: contract farming (Cooperatives need capital to buy produce from farmers), price stabilization fund (A risk management to involve producers), and soft loan facility for small scale farmers (Cooperative marketing activity should bundle with financial services for small scale farmers).

According to the Sustainable Agricultural Development Strategy towards 2030, the Egyptian Government launched the agricultural policy on strengthening the farmer's organization, in particular the promotion of a new cooperative's model organized by voluntary farmers. In short term, with the above proposed Projects, the capacity development of the agricultural cooperative will be carried out. From an aspect of mid and long term, the agricultural cooperative is desirable to develop as a comprehensive cooperative covering guidance of farm management and credit business.

Strengthening of Extension Services for Improving Agricultural Marketing

To carry out extension services responding to the needs of farmers and market, location specific adoption technologies and extension services based on site-diagnosis are required to develop in parallel with capacity building of agricultural personnel. District and village agricultural extension personnel should have sufficient capability to provide extension services delivery as generalist and need to consult extension specialists. In order to strengthen on site-diagnosis technologies and to carry out extension services based on location specific adoption technologies, it is necessary to upgrade existing laboratories and equipment for analyzing soils and diseases.

Extension services by the existing staffs are limited in mobilization of extension specialists and generalists under the current organizations. In order to complement this mobilization, it is necessary to utilize local resources. This project aims to strengthen a farmer-to-farmer extension mechanism through the training of advanced farmers who are willing to cooperate.

Prospects for Improvement of Agricultural Finance Accessibility

The main prospect for Agricultural Finance is to improve financial accessibility for marketing agricultural produce and improve livelihood of small scale farmers. Strategy for improvement of agricultural finance accessibility is expected to promote current available funds and enhance farmers' knowledge about financial resources. For a longer strategy, it is necessary to strengthen the financial role of the Agricultural Cooperatives in order to provide loans based on farmers' demands.

The main activities for the short term are to emphasize promotion of current available funds rather than establishing new funds or set up new credit lines. Activities will be 1) collecting and providing information about agricultural loans, 2) holding seminars about available funds by the staff of the funds, 3) workshops to enhance ability of farmers for writing loan application proposal and planning a project. For mid-long term strategies, activities are emphasized for strengthening the cooperatives' capability for managing financial services and setting up a demand-oriented loan service .

Improvement of Marketing Infrastructure

The improvement of marketing infrastructure proposed here would require the commitment of other institutions rather than MALR, such as the Governorate Office. This Master Plan, however, refers to these projects as related projects to contribute to improving agricultural marketing for small scale farmers. These are "Renovation and Rehabilitation of Wholesale Markets", "Construction of Wheat Silos" and "Road Network Improvement".

Targets of the Development Projects

The targets by each Project have been set by period. The Project concerning the capacity development of the agricultural cooperative (expanding market channel) targets one cooperative per District, or 20 cooperatives of the two governorates in the short term period and 5 cooperatives per District in the mid-long period. The target of the Project for establishing agro-processing business has been set considering the difficulty that the farmers' organization has to prepare the fund for investment. The Projects at the stage of input / production (mainly demonstration farm activity) targets to establish 2 feddan of demo-farm per season (summer and winter: twice per year) per District.

Approximate Cost Estimate

The approximate cost for implementing the projects is estimated at LE19 million for the short term

period (5 years), or 1.7 million LE/year for Minia and 2 million LE/year for Assiut. As Assiut Governorate consists of 11 districts while Minia does 9 districts, the project cost for Assiut gets higher than Mnia. The project cost for the mid & long term period (13 years) is estimated at LE54.4 million, or 1.88 million LE/year for Minia and 2.3 million LE/year for Assiut.

The project costs include the one for capacity development such as personnel expenses, transportation, and equipments for trainings, inputs for demo-farms, and the construction of small-scale infrastructure. Investment cost for establishing agro-processing business is supposed to be borne by the business entity, i.e. farmer's organizations. As for the construction of post-harvest facility (drying facility of herbs), it is proposed to allocate public investment using public land.

The Benefits of the Development Projects

(Economic Benefits)

IRR (Internal Rate of Return) of "1-5 Making brand of agricultural produce" and the combination of the projects under the input / production stage are high because the investment cost is relatively low, and the more farmer-to-farmer extension expands, the higher the economic efficiency will be. As for the projects of agro-processing and post-harvest processing facility, IRR are relatively low compared to the above ones as the initial investment cost for these projects are relatively high. However, the economic efficiencies of these projects are high enough should the business were successful. The NPV (Net Present Value) of the projects under the input / production stage can increase by combining the development tactics of "Expanding market channels" as the number of beneficiary could increase. Based on the results of the Pilot Project, relatively high increase of farm income and high NPV are expected for the project of "Making brand of agricultural produce".

On the agro-processing project, it will contribute to providing small scale farmers with the place to sell excessive produce, which cannot be sold at the wholesale market. Post-harvest facility to dry herbs would enable farmers to sell green basil at higher price should the agricultural cooperative considers the public benefits as the facility can make higher quality products. Also the establishment of these facilities can create job opportunities for local women and landless farmers.

(Other Development Benefits)

In addition to the economic effects, other development effects are expected to come out, namely "Expanding social participation of women by creating job opportunity for them", "Utilization of Resources and Increasing Safety of Food", "Contribution to food security", "Revitalization of agricultural cooperatives – utilizing the assets of the village to activate rural economy" and "Narrowing regional economic disparity with poverty reduction".

Activities, Targets, and Approximate Cost Estimate of the Projects

Tactics		Project No.	Title	Short Term（1st to 5th Year：2013～2017） Major Activity	Target	App. Cost (LE)	Mid & Long Term（6th to 18th Year：2018～2030） Major Activity	Target	App. Cost (LE)	Total APP. Cost (LE)
1. Sales	Acquiring market information to utilize for farming and sales	1-1	Establishing Market Information System	Establish market information collection and dissemination system (combine with Mobile Extension Service of CAAE)	put up billboards and information dissemination in 342 cooperatives in Minia and 250 cooperatives in Assiut	288,400	Establish information center in the Governorate and each District Agriculture Office	Information center at 22 sites (GAD and 9 DAO in Minia, GAD and 11 DAO in Assiut)	1,342,000	1,630,400
	Expanding market channels	1-2	Supporting Small Scale Farmers to Expand Market Channels	Support marketing by village agr. cooperative (contract farming, loan provision to farmers, price stabilization fund etc., fund razing, collective shipping)	Revitalize 1 agr. cooperative per District (9 in Minia, 11 in Assiut)	482,000	Increase the No. of cooperative to participate in marketing	Revitalize 5 village cooperatives per District (45 in Minia, 55 in Assiut)	1,840,000	2,322,000
							Promote multi business cooperative (cooperative union)	Nurture 3 village cooperatives per Governorate to be multi business cooperative (union)	45,000	45,000
		1-3	Facilitating Collection Places in Villages	Construct collection place managed by cooperative	Construct 1 place per District (9 in Minia, 11 in Assiut)	1,400,000	Increase the No. of collection place	Construct 5 sites per District (45 in Minia, 55 in Assiut)	5,600,000	7,000,000
		1-4	Facilitating Selling Points (Community Markets, Government Direct Shops, etc.)	Construct community market(village road paving, or renovating coop. land), and improve direct shop of GAD, DAO	1 market per District (9 in Minia, 11 in Assiut), Renovate Governorate / District direct shop (10 in Minia, 11 in Assiut)	1,610,000	Increase the No. of community market	Construct 5 sites per District (45 in Minia, 55 in Assiut)	5,600,000	7,210,000
2. Post-harvest	Adding value to produce	1-5	Making Brand of Agricultural Produce (Utilizing	Improve distribution of bio-materials, demo-farm, making brand of "Clean Agro-produce" through direct shops	Demo-farm of bio-materials: 10fed/District (200fed) Train 400 farmers	3,000,000	GAP certification by the Governorate, Advertisement, develop large scale contract farming, expansion to New Land	Demo-farm of bio-materials: 100fed/District (2,000fed) Train 4,000 farmers	6,000,000	9,000,000
		2-1	Promoting Primary Agricultural Processing (adding value to produce)	Establish organization, facility for processing of produce in the village (pickles, dried vegetables, frozen vegetables etc.)	6 Districts 12 villages (12sites) to establish agro-processing units: create job of 70～120 people (Initial cost should be procured by the cooperative)	427,200	Upgrade quality of products Improve safety by HACCAP Increase the No. of processing unit	Introduce quality / hygiene control rule, HACCP Establish 12 sites/5years of agro-processing (total 36 sites): create job of 210人～360 people	1,281,600	1,708,800
		2-2	Promoting Processing Products (Converting Useless Crops to Useful)	Establish organization, facility for processing low grade produce to add value	6 Districts 12 villages (12sites) to establish agro-processing units: create job of 70～120 people (Initial cost should be procured by the cooperative)	427,200	Upgrade quality of products Improve safety by HACCP Increase the No. of processing unit	Introduce quality / hygiene control rule, HACCP Establish 12 sites/5years of agro-processing (total 36 sites): create job of 210人～360 people	1,281,600	1,708,800
	Reducing post-harvest loss	2-3	Establishing Post-harvest Facilities	Improve post-harvest processing of specialty crops (herbs e.g. basil), establish farmers' organization	Construct 1 site (100 farmers per year use facility)	1,260,200	Increase the No. of post-harvest facility Establish production and management	Construct 2 sites/5years (total 6 sites)：used by 600 farmers per year	3,780,600	5,040,800
3. Input / Production	Improving quality of produce	3-1	Improving Agricultural Input Distribution System	Establish certified seeds / seedling distribution system by GAD	Supply seedlings to 4,000feddan in Assiut (2nd to 5th Year)	800,000	Expand the system of certified seeds / seedlings production and supply	Supply seedlings to 13,000feddan in Assiut	1,300,000	2,100,000
				Introduce bio-control methods against pests	Total 100 demo-farms, train 2,000 farmers	3,400,000	Expand the production and supply system of bio-control materials	Total 260 demo-farms, train 5,200 farmers	6,000,000	9,400,000
				Demo-farm of certified seeds / seedlings Guide compost manure Guide pest control Introduce bio-control methods		3,470,000	Strengthen distribution system of fertilizers / pesticides Strengthen forecasting of pest occurrence and guidance to farmers		8,905,000	12,375,000
		3-2	Improving Quality of Agricultural Produce	Introduce quality improvement technologies Construct collection place(1-3)			Establish official quality standard of agr/ produce Strengthen input distribution system			
	Harvesting in off-season	3-3	Adjusting Cropping Pattern	Introduce cropping pattern to harvest in off-season Strengthen expanding green house horticulture			Establish year-round cropping pattern of certain crops			
	Promoting profitable crops	3-4	Promoting Horticultural Crop Production	Strengthen extension of horticulture based on demand Promote crop diversification			Establish stable supply system of agr. inputs Strengthen loan system for farming			
4. Administrative Support	To promote above tactics, assist in farmers' awareness creation, capacity development, cooperation, and access to finance	4-1	Supporting Capacity Development of Farmers' Organization	Support farmers' organization to implement above projects (guidance, training)	(Support above projects)	-	Support making multi business agricultural cooperative (above 1-2)	(Support above projects)	-	-
		4-2	Strengthening Agricultural Extension Services	Capacity development of extension workers to implement above projects Renovation of test equipments	Train total 136 extension workers (46 in Minia, 90 in Assiut)	1,815,000	Service provision by trained extension workers and strengthen farmer to farmer extension	Train village extension workers (344 in Minia, 216 in Assiut)	9,840,000	11,655,000
		4-3	Improving Agricultural Finance Accessibility	Information collection and dissemination of agricultural finance (seminar, workshop)	Information sharing in all the village cooperatives Holding seminar (170 and 120 cooperatives in Minia and Assiut)	652,300	Financial service according to the diversified needs of farmers and assist in establishing loan facility by agr. Cooperative or farmer group	Hold seminar in the rest of village cooperatives, 5 cooperatives per District, total 100 cooperatives (55 in Minia 45 in Assiut) will provide loan service like micro-finance.	1,594,000	2,246,300
Approximate Project Cost Total (LE)						19,032,300			54,409,800	73,442,100
Approximate Annual Project Cost (LE/year)						3,806,460			4,185,369	4,080,117
Approximate Annual Project Cost in Minia (LE/year)						1,712,907			1,883,416	1,836,053
Approximate Annual Project Cost in Assiut (LE/year)						2,093,553			2,301,953	2,244,064

As of June 2012 1LE = ￥13
1US$ = LE6

Points to Be Considered for Implementing Projects (Summary)

This chapter discusses the points to be considered when implementing the Development Projects proposed in this M/P based on the lessons learned from the Pilot Projects, which were implemented from March 2011 to April 2012. The points to be considered are focused on marketing support and agri-business promotion in the village like agro-processing, since these supporting activities have been unfamiliar for the government administration as they are at the fringe of private initiative as well as the fact that this M/P is formulated from the viewpoint of the rural development through improving marketing of agricultural produce. Then the following issues are discussed: extension services, which have ever been important service of MALR, supporting the farmers' organization, i.e. agricultural cooperatives, which have been functioning as a window of agricultural administration in the village, and implementation set-up to integrate these issues. Furthermore, social consideration in implementing projects is discussed.

Summary of the Lessons and Recommendations from the Pilot

Item	Points to Be Considered
Supporting Marketing by Administration	Relevance of information should be considered, should pay attention to price trend and assist farmers in planning cropping pattern.
	Establish direct shops at Governorate / District, cooperative to promote sales / Sale promotion by holding agriculture fair.
	Consider public investment for infrastructure improvement for specialty crop area.
Promotion of Agri-business such as agro-processing	Support making financial plan including the operation cost of the first few months as well as the investment cost
	Support from material procurement, planning for marketing and technical trainings, monitoring and supervision based on the written record.
	Supervise licensing, contracting with workers to upgrade the business.
	Require building network of human resources in the area.
Extension (Cultivation improvement, Horticulture promotion)	Importance of practical training.
	Coordination among Governorate, District and Village offices, and research center is effective.
	New technology should be transferred firstly to the experienced farmers and diffused to the subsistence farmers around (Two-step Agricultural Extension).
	Scale of demonstration farm (6-10fed led by Governorate, 20-40fed led by District).
Farmers' organization	Village cooperative can be a body to establish agribusiness (agro-processing) as they can use their assets namely land and buildings, and they also have human resources.
	Support the village cooperative through the cooperative structure (Governorate and District federations) to get internal fund raising or accessing to external loans.
Implementation set-up	To promote establishing a committee joined by the stakeholders in the region to implement projects By this way, the possibility of involving active person can become higher. Also this can make network of human resources in the region and the committee can be a recipient of the support.
	Strengthen the function of MALR (coordination for committee, support agribusiness establishment in the village, promote public-private partnership for production improvement,, managing direct shops and matching between farmers and traders.
	Required to make linkage between the Central Administration and Local Administration
Social consideration	Especially rural women seldom have external communication and therefore, peer-to-peer learning processes, such as study tours and field visits, could be very effective.
	The wage of women can vary widely depending on the local women labor supply due to the difference of openness of the local society. This should be considered to establish business.
	In the village, people opt to follow the bond of big family (eela). This should be considered for extension activity. When the board members of cooperative represents the big families of the village, this could help maintain social balance when we go thorough the cooperative.
	The characteristics of the village differ by the distance from cities, historical background, tribal diversity, etc. The social structure of the village should be understood prior to implementation.

Implementation Set-up

(Collaboration among Diversified Stakeholders in Implementation Committee)

It is proposed to establish a regional implementation committee involving various stakeholders in regional development when implementing the projects. In the governorate the practice of committee establishment has been done as organization method of the administrations based on the Civil Worker Law (Law No.47 /1987) and Local Administration Law (Law No.43 / 1979). Based on this government practice, it is proposed to establish an implementation committee as public-private partnership (PPP) calling for the participation of farmers, agricultural cooperative, and private companies as much as possible in order to implement the projects which require the collaboration of more diversified entities than usual agricultural technology extension such as agro-processing and marketing support (direct shop promotion and matching producers and buyers). Major participants for the committee are assumed to be farmers' organization / agricultural cooperative, Governorate Agriculture Directorate, District Agriculture Office, research center, university, trader, retailer, private companies for input distribution, and so on.

(Role and Capacity Development of Governorate Agriculture Directorate)

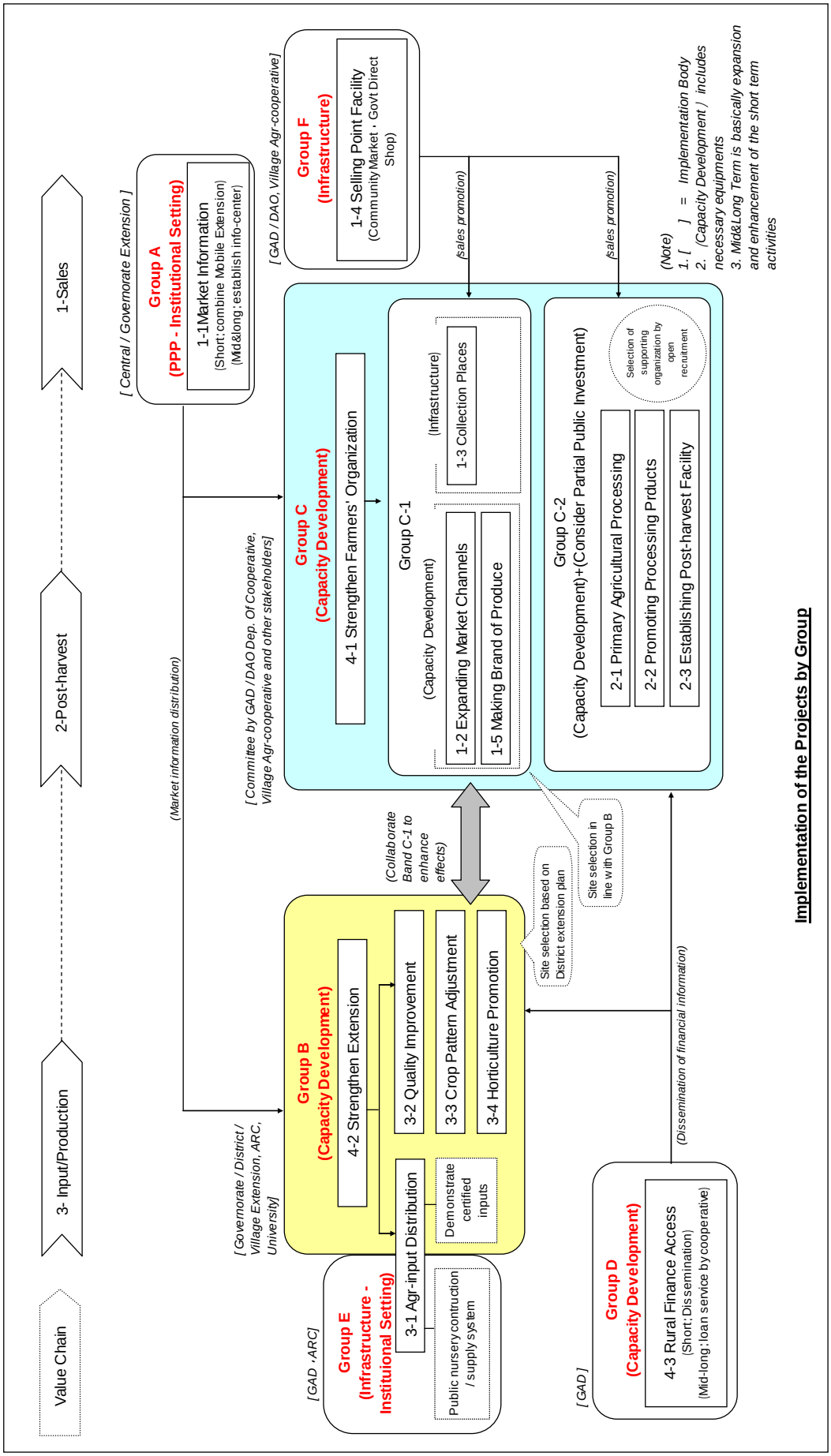
To promote the project, support for agribusiness establishment in the village such as agro-processing, and public-private partnership would be required for the effective and efficient project implementation. For this reason, strengthening the function of the MALR is suggested as follows:.

- Coordination for the above proposed committee establishment
- Supporting the establishment of Agri-business (agro-processing) e.g. supporting organization, business planning, support and information provision for licensing, facility designing, loan facility, provision of technical and management trainings
- Support for making partnership among public entity, private sector and research centers for agricultural extension
- Manage direct shop at Governorate and District Offices, support matching between farmers and traders, support selling quality improved agricultural produce, processed products, making brand

(Forming Implementation Groups and Combining Projects)

It is proposed for the effective implementation to group the projects in consideration of the stages of value-chain and the components of each project and form implementation groups with GAD (Governorate Agriculture Directorate) as the core.

The proposed implementation groups are Group A: to collaborate with the PPP in the Central Administration for "Market Information Collection and Dissemination", Group B: the projects at the stage of input / production together with "Strengthening Agricultural extension Services" as a core, Group C: "Strengthening of Farmers' Organization" as a core to be implemented mainly by the agricultural cooperative, Group D: to assist to improve the access to rural financial services, which are essential for business promotion of farmers' organization and introduction of new farming technologies, Group E: to facilitate infrastructure of "Agricultural Input Distribution System", and Group F: to facilitate infrastructure of "Selling Points" to promote marketing. As for Group C, strengthening farmers' organization, it is divided into two groups: marketing promotion group by the farmers' organization (Group C-1) and group for promoting agro-processing business (Group C-2). Furthermore, it is effective that all these groups are implemented in collaboration with among another.


Value Chain
3- Input/Production
2-Post-harvest
1-Sales
[Central / Govemorate Extension]
Group A
(PPP - Institutional Setting)
1-1Market Information
(Short: combine Mobile Extension)
(Mid&long: establish info-center)
[GAD / DAO, Village Agr-cooperative]
Group F
(Infrastructure)
1-4 Selling Point Facility
(Community Market , Govt Direct Shop)
(Market information distribution)
[Committee by GAD / DAO Dep. Of Cooperative, Village Agr-cooperative and other stakeholders]
Group C
(Capacity Development)
4-1 Strengthen Farmers' Organization
Group C-1
(Capacity Development)
1-2 Expanding Market Channels
1-5 Making Brand of Produce
(Infrastructure)
1-3 Collection Places
Group C-2
(Capacity Development)+(Consider Partial Public Investment)
2-1 Primary Agricultural Processing
2-2 Promoting Processing Prducts
2-3 Establishing Post-harvest Facility
Selection of supporting organization by open recruitment
(sales promotion)
(sales promotion)
(Note)
1. [ ] = Implementation Body
2. (Capacity Development) includes necessary equipments
3. Mid&Long Term is basically expansion and enhancement of the short term activities
(Collaborate Band C-1 to enhance effects)
Site selection based on District extension plan
Site selection in line with Group B
[Govemorate / District / Village Extension, ARC, University]
Group B
(Capacity Development)
4-2 Strengthen Extension
3-2 Quality Improvement
3-3 Crop Pattern Adjustment
3-4 Horticulture Promotion
Demonstrate certified inputs
[GAD ·ARC]
Group E
(Infrastructure - Instituional Setting)
3-1 Agr-input Distribution
Public nursery contruction / supply system
(Dissemination of financial information)
[GAD]
Group D
(Capacity Development)
4-3 Rural Finance Access
(Short: Dissemination)
(Mid-long : loan service by cooperative)
Implementation of the Projects by Group

Outline of the Projects by Implementation Group

Group	Project	Category	Main Actors	Capacity Development	Direction
Group A	1-1 Market Information System	PPP, Institutional set-up	Central, Governorate Agr. Extension Sector, ARC	—	Already started PPP in MALR will be used to promote this project
Group B	4-2 Strengthening Extension 3-1 Improving Agr. Input Distribution 3-2 Improving Quality of Produce 3-3 Harvesting in Off-season 3-4 Promoting Horticulture	Capacity Development	Governorate / District Agriculture Extension, Village Extension, ARC, Agr. Research Station, University (Minia, Assiut), Farmers Based on existing extension line, to participate in the committee to be formed by the Group C-1	Governorate / District Officers, Extension workers, Farmers	Basically implement by the existing extension line and ARC. It is rather easy to initiate the project as it is based on the existing extension line, but to make more effective implementation, it needs to collaborate with Group C. District Extension Plan
Group C					
Group C-1	4-1 Strengthening Farmers' Organization 1-2 Expanding Market Channels 1-5 Making Brand of Agr. Produce 1-3 Facilitating Collection Places	Capacity Development (1-3: Infrastructure)	Governorate / District Agr. Cooperative Sector, Village Agr. Cooperative, Governorate / District Agr. Cooperative Union, Farmers, (Private traders etc.): establish implementation committee with these stakeholders	Governorate / District Officers, Cooperative Officers and Organization, and Farmers	It needs to revitalize the agr. Cooperative. It needs to start with small number of cooperative and expand the activities gradually. It is effective to collaborate with Group B to realize the added-value.
Group C-2	4-1 Strengthening Farmers' Organization 2-1 Promoting Primary Agro-processing 2-2 Promoting Processing Products 2-3 Establishing Post-harvest Facilities	Capacity Development (consider public investment in part of facility)	Governorate / District Agr. Cooperative Sector, Village Agr. Cooperative, Governorate / District Agr. Cooperative Union, Farmers, (Private traders etc.): establish implementation committee with these stakeholders	Governorate / District Officers, Cooperative Officers and Organization, and Farmers	Agr. Cooperative is the entry point of this project. Since the cooperative needs to prepare capital, it needs to take time for capacity development and assist in preparing the business plan and conduct trainings. Partial public investment e.g. drying yar
Group D	4-3 Improving Rural Finance Accessibility	Capacity Development	Governorate / District Agriculture Offices	Governorate / District Officers	Collect the information on existing rural finance and hold seminar to disseminate the information. It is relatively easy to start the activity.
Group E	3-1 Improving Agr. Input Distribution	Infrastructure, Institutional set-up	Governorate / District Agriculture Offices, Agriculture Research Station	—	Infrastructure improvement of seedling nursery etc. in the GAD and Agriculture Research Station. At the same time, institutional set-up for supply system will be carried out. It needs fund to improve the infrastructure.
Group F	1-4 Facilitating Selling Points	Infrastructure	Governorate / District Agriculture Offices, Village Agr. Cooperative	—	It is a small scale infrastructure and equipment provision. In the area of Group C, judged with necessity, urgency and sustainability, the implementation will be followed.

Priority Projects

Considering the experiences from the Pilot Projects, capacity development of the stakeholders such as small scale farmers is crucial. It is, therefore, proposed to put Group B (strengthening extension services) and Group C (strengthening farmers' organization) in the highest priority. Group A (Market Information) has already been implemented by the Ministry as PPP. This group should take action to incorporate the market information dissemination to the Mobile Extension Service. Group E (Agricultural Input Distribution Improvement) and Group F (Facilitating Selling Points) will be implemented according to the progress of Group B and C. Group D (Improvement of Agricultural Financial Accessibility) should start information collection and dissemination activities so as to support the extension of farming technologies in Group B and agri-business promotion in Group C.

Conclusion and Recommendations

(Conclusion)

This Project has formulated a Master Plan for Rural Development for small scale farmers in the Project Area from the viewpoint of improving marketing of agricultural produce. In the course of the Project, the Pilot Projects were implemented for a period of 14 months and the lessons learned from the practices have been reflected into the Master Plan, which consists of the points to consider for implementing the plan. This Master Plan is positioned as one to contribute to achieving the strategic goals of the Ministry's "Sustainable Agriculture Development Strategy 2030", namely "Increasing the competitiveness of agricultural products in local and international markets", and "Improving the living standards of the rural inhabitants, and reducing poverty rates in the rural areas".

This Master Plan is putting the promotion of value added agriculture by strengthening agricultural extension services and also agricultural marketing and agro-processing business through activating village agricultural cooperatives into priority projects and their implementation will activate the rural economy. It is concluded that this Master Plan can contribute to promoting the Agriculture Development Strategy of the Ministry in Minia and Assiut Governorates in order to develop the agriculture sector and reduce poverty in the rural area.

(Recommendations)

1) In the Project Governorates, the counterparts have taken initiative to continuously support the Pilot Project sites. As of May 2012 in Assiut Governorate, the counterparts have been preparing for establishing the committee, as proposed in this Master Plan, to support the full operation of the basil drying yard in this crop season. The Committee would be formed with the Governorate Agriculture Directorate, the District Agriculture Office, and the Village Agricultural cooperative. The Ministry should take action such as budget allocation in order to smoothly implement the development plans formulated by this Master Plan.

2) The Ministry has resumed recruiting the new qualified staff since 2012 after long time attrition. In this year, around 70 college graduates, out of whom 20% are women, and 53 college graduates have been hired in Minia and Assiut Agriculture Directorates respectively. These young officers have keen interest in their career as they were actively making their comments during the seminars of this Project. These young officers should be assigned to implement the Master Plan and trained from the senior officers through the implementation.

3) The Central Administration for Foreign Agricultural Relation in the Ministry has initiated the liaison conference in order to coordinate with the donors which are involved in agricultural

development in Egypt. This Master Plan should be introduced to them through this kind of conference so that the Master Plan could be effectively utilized for the rural development in Upper Egypt.

4) This Master Plan formulated based on the practice of the Pilot Projects could be applicable in other Governorates. In the course of implementing the Master Plan, the practice based on the Master Plan should be taken into consideration introduce and extend to the other Governorates.

5) As above-mentioned, this Master Plan has been formulated from the viewpoint of improving marketing of agricultural produce. However, there is a need of comprehensive measures including other development points of view to achieve the poverty reduction in rural Upper Egypt. Following are the proposed further studies and practices, which are highly related to the objectives of this Master Plan:

- Livestock improvement: although it was out of the scope of this Master Plan Study, it has been recognized that the animals are one of the important income sources for small scale farmers and landless farmers. Also small animals like poultry raised inside the house is a source of income for women in the village. There is a need of developing apiculture in Assiut Governorate, as well.

- Income Generation / Livelihood Improvement: it seems the population of non-agricultural employment as well as landless farmers has been increasing in the rural area of Egypt as the average village population size reaches as big as 10,000 as the population growth continues. It is important to elucidate the actual status of non-agricultural employment as well as small scale farmers and landless agricultural employees in the village in order to promote the inclusive development. An example of the village surveyed by this Project reveals that the landless farmers occupy a half of the village population and those who won more than 1feddan counts a few percent. It is therefore required to consider the model of livelihood with farming only, farming and off-farm work and off-farm work only. As in the Pilot Projects, a roof cultivation system with pots were tried for landless and women. Assisting villagers for income generating activities or improving living conditions including the development of off-farm work or vocational and basic education as indicated during the village workshops in this Project should be taken into consideration.

- Land reclamation to mitigate the tight land resource: In old land the transfer of farmland into to other use has progressed due to population growth resulting in the decrease of farmland. In addition to the tight land resource, amendment of land tax law has driven the landowners to raise the rent and the income of the peasants has been suppressed. The absolute shortage of land hinders the transfer of subsistent small scale farmers into commercial farmers in the old land. The land reclamation, which has already been implemented ever since by the Government, should still be further promoted and the institutional consideration to allocate the land to small scale farmers should be required.

- Irrigation development as a stable agricultural production: There have been many voices in the villages about water shortage especially in the ones located the lower edge of the irrigation canals during the study of this Project. Continuous endeavor for irrigation development is required, i.e. extending the efficient on-farm irrigation technology promoted by the Ministry of Agriculture and Land Reclamation and the improvement of irrigation facilities by the Ministry of Water Resources and Irrigation.

PART I: OVERVIEW

CHAPTER 1 INTRODUCTION

This document presents the Final Report based on the Scope of Work and Minutes of the Meeting convened in December 2009 between the Ministry of Agriculture and Land Reclamation (MALR) in the Arab Republic of Egypt and the Japan International Cooperation Agency (JICA) for "The Project for the Master Plan Study for Rural Development Through Improving Marketing of Agricultural Produce for Small Scale Farmers in Upper Egypt" (IMAP).

1.1 Rationale of the Project

During the recent years, the Egyptian economy has been marked by steady economic growth, with an annual GDP growth rate of around 7%, among other improving macroeconomic indicators. On the other hand, 30 million people, or around 43% of the nation's population, still live with a daily income of USD $2 per capita or less (UNDP Human Resource Development Report [HRDR] 2007). Therefore, poverty eradication is one of the most important issues facing the country. In addition to the issue of the income gap, regional economic disparity is also a problem in the country.

Upper Egypt is the region with the highest poverty, as 60% of the poor live in Upper Egypt and 50% live in the rural areas of the region (UNDP HRDR 2004). The Government of Egypt (GOE) has started to focus on achieving regional balance by allocating 42% of local public investments to fostering development in the Upper Egypt governorates in the sixth Socio-economic Development Plan (2007 -2012).

In Upper Egypt, about 53% of the working population works in agriculture, and therefore improving the livelihoods of people working in this sector, such as farmers, would significantly alleviate poverty in Egypt. About 85% of farmers in this region are small-scale farmers with holdings of less than 3 feddan (1.26 ha). Due to the lack of development of farmers' organizations such as agricultural cooperatives, small scale farmers have not been able to add value to their agricultural produce by collective marketing, preservation, introducing new products based on market information, agro-processing, etc.

Regarding the aforementioned situation, the Government of Egypt (GOE) requested the Government of Japan (GOJ) for technical cooperation aiming at improving the livelihood of small scale farmers through improving marketing of agricultural produce. In response to the request, JICA carried out a survey for project formulation in August 2009 and agreed with the GOE on the objectives, contents and major inputs of the project, and JICA and the Agriculture Services and Follow-up Sector (ASFS) of the MALR concluded the Scope of Work (S/W) for the Project in December 2009.

1.2 Objectives and Scope of the Project

1.2.1 Objectives of the Project (IMAP)

IMAP is implemented with the following objectives:

1. To formulate a Master Plan for Rural Development through improving marketing of agricultural produce for small scale farmers in Upper Egypt after verification by the pilot projects
2. To provide opportunities for counterpart personnel to obtain relevant skills and technology through formulating the Master Plan

IMAP is basically a Master Plan (M/P) Study focusing on improving marketing of agriculture produce for small scale farmers. The basic concept of the M/P in this Project is to formulate plans in the short term (within 5 years), the midterm, and the long term (around 15-20 years) for rural development through various activities, including introducing agricultural produce and varieties, post-harvest preservation, and raising values by processing based on market demand.

In addition to this, pilot projects will be implemented in the course of the study in order to obtain feedback from actual activities and reflect them into the final M/P to make it more practical and effective. As in the first objective, at first a draft M/P will be formulated and the pilot projects in the short term time scale will be implemented based on this draft. Any lessons learned or feedback garnered will be reflected in the final M/P. As for the second objective, the scheme can provide learning opportunities for the counterparts not only from the survey process, but also from the actual implementation of the pilot projects.

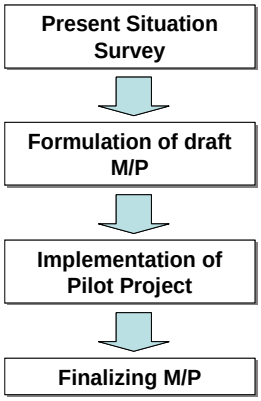


Figure 1.2.1 Process of the Project

1.2.2 Project Area and Target Beneficiaries

The Project area covers Minia and Assiut Governorates situated in the middle of Upper Egypt and the target beneficiaries are the small scale farmers defined as cultivating less than 3 feddan (5 feddan in New Land).

1.3 Implementation Arrangement of the Study

1.3.1 Counterpart Agency

The Agriculture Services and the Follow-up Sector (ASFS) of the MALR shall act as the counterpart agency to the Study Team. Other relative agencies in the Project are agricultural cooperatives, the Agricultural Research Center, the Central Administration for Agricultural Extension, Economic Affairs, the Central Administration for Foreign Agricultural Relations, and the Minia and Assuit governorates. The organization charts of the MALR are attached in APPENDIX 4.1.

1.3.2 Study Schedule

The Study is implemented from March 2010 to August 2012 for a total of 30 months divided into two phases. Phase I lasted 12 months, including three and a half months of work in Japan. In this phase, the situation analysis of the project area was carried out and the draft Master Plan was formulated by the end of February 2011. Selection and design of pilot projects was also carried out.

Phase II started in March 2011 and lasted 18 months. Phase II includes the implementation of the pilot projects for 14 months, which covered two crop seasons (one summer and winter crop each). Reflecting the lessons learned from the pilot project implementation, the final Master Plan was formulated. Table 1.3.1 shows the overall schedule of the Project.

Table 1.3.1 Schedule of the Project for M/P Study

Month	2010										2011												2012							
	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Phase	Phase I												Phase II																	
Work in Japan																														
Work in Egypt																														
Situation Analysis																														
Formulating Draft M/P																														
Pilot Project Implementation																														
Finalizing M/P																														

1.3.3 Steering Committee

For the implementation of the Project, ASFS as the implementing agency has assigned the number of counterpart personnel in accordance with areas of Japanese Study Team members for the Project in Minia and Assiut Governorate Agriculture Directorates as well as the Central Level. At the Central level, the Central Administration for Agriculture Cooperation (CAAC) acts as the daily contact of the Study Team.

For the smooth and effective implementation of the project, a Steering Committee has been established with members shown in Figure 1.3.1. For the first plan, representatives of the Social Fund for Development (SFD) and African Development Bank (AfDB), who are going to implement similar project in Upper Egypt, were requested to form a working group with the Study Team and JICA Egypt Office. However, after initial discussion, it was decided that SFD and AfDB will also be members of the Steering Committee.

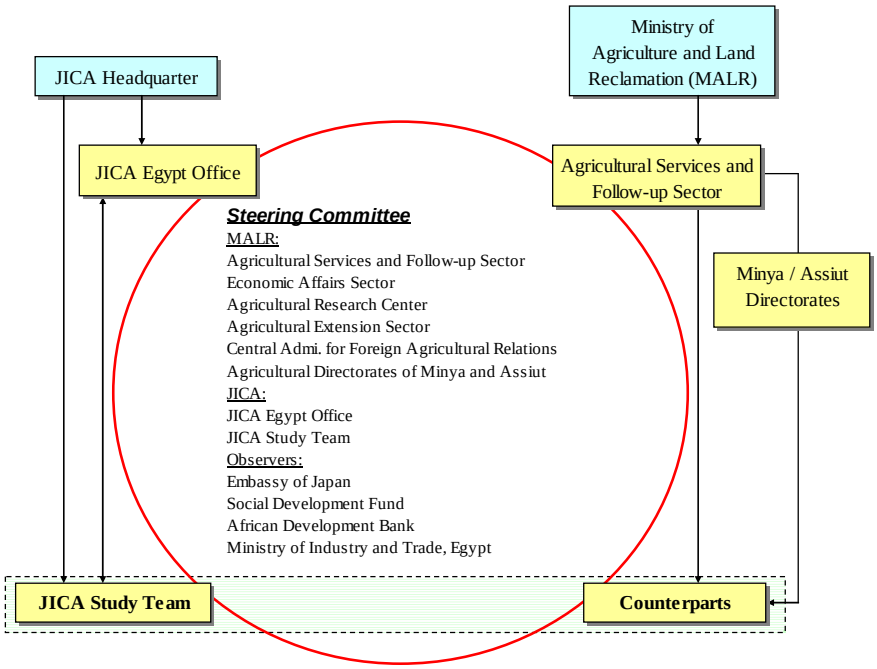


Figure 1.3.1 Implementation Set-up

1.4 The Study Approach

1.4.1 Process of Master Plan Formulation

As explained above, the Project will be implemented with the following process: (1) Outline Survey / Present situation analysis → (2) Formulation of draft M/P → (3) Implementation of Pilot Projects → (4) Finalization of the M/P. Outline survey / present situation analysis is divided into two categories: Sector survey and village level survey. The sector survey was designed to assess the area and subjects from technical, institutional, and macroeconomic points of view by the study team and its counterparts. The village level survey sought details from the farmer's point of view, so workshops with villagers were carried out in addition to the field survey.

For the village level survey, the following issues must be taken into consideration:

- How to investigate the present situation of the broad project area at the micro (i.e. village) level, since there are 598 villages total in the two governorates.
- How to position the marketing of agriculture produce in the context of small scale farmers' livelihoods, and also from the rural development point of view in the project area.
- How to promote ownership of the project among the stakeholders, taking into account sustainability issues.

For the first issue, getting down to the village level in such a broad area, the team held workshops with

the governorate and district officers in order to analyze the situation of the governorate and select some villages to focus on during the field survey. This exercise was intended to utilize the knowledge of the officers who have been working and living in the area for years, and therefore should be familiar with the situation of the area. At the workshops, the basic frame according to the objectives of the project was shared with the officers, e.g. the target is small scale farmers and the primary issue is the low cash income of small scale farmers, etc. The analysis was carried out based on this frame.

For the second issue, that of positioning agricultural marketing in small scale farmers' livelihoods, the team requested the officers to select two types of the villages. The first type was a "usual (typical) village" in the area, which could represent the general situation of the area analyzed at the workshops. is the second represented a "potential village", which had potential to improve the marketing of agricultural produce.

The usual (typical) village would represent the area as a whole, so we could capture the common issues in the area and would be able to position the marketing aspects in the usual (typical) village accordingly. This process was designed to estimate the effects of improving marketing of agricultural produce for small scale farmers from the broad, rural development point of view. At the workshops with the officers, one usual (typical) village from each district was selected, including nine villages in Minia, eleven villages in Assiut and three villages from each governorate. These villages were selected to hold workshops.

As for the potential villages (for marketing), we focused more on the direct issue of improving agriculture marketing and therefore picked some specialty crops prevalent in the project area and observed any marketing activities already taking place. After the selection of some potential villages, the team investigated the villages and held a second workshop with the governorate and district officers. It was agreed to focus on garlic, potato and onion in Minia, and tomato, basil and pomegranate in Assiut. The team studied agriculture production and marketing in detail for these specific crops.

The workshops were also meant to consider the third issue of how to promote the ownership of stakeholders, especially small scale farmers. The workshops are meant to be tools of participatory analysis. Though limited, the study tries to provide opportunities for the farmers to discuss and analyze the situation by themselves, thus acknowledging the issues as their own. Also, the workshops provide venues for consensus making.

Together with sector survey and village level survey, the findings were analyzed and integrated in order to identify major constraints and, conversely, any opportunities in the project area. This integration was carried out with the counterparts through workshops and meetings.

Based on the results of the present situation analysis, the draft M/P was formulated. The draft consists of a development framework, development strategies and programs in the short, midrange and long terms. From the draft M/P, some components were selected as pilot projects with durations of 14 months from March 2011 to April 2012. The villages we had workshops in, as well as the areas of focused crops, formed the basis for selecting pilot projects. The following Figure 1.4.1 illustrates the process of the formulation of the M/P:

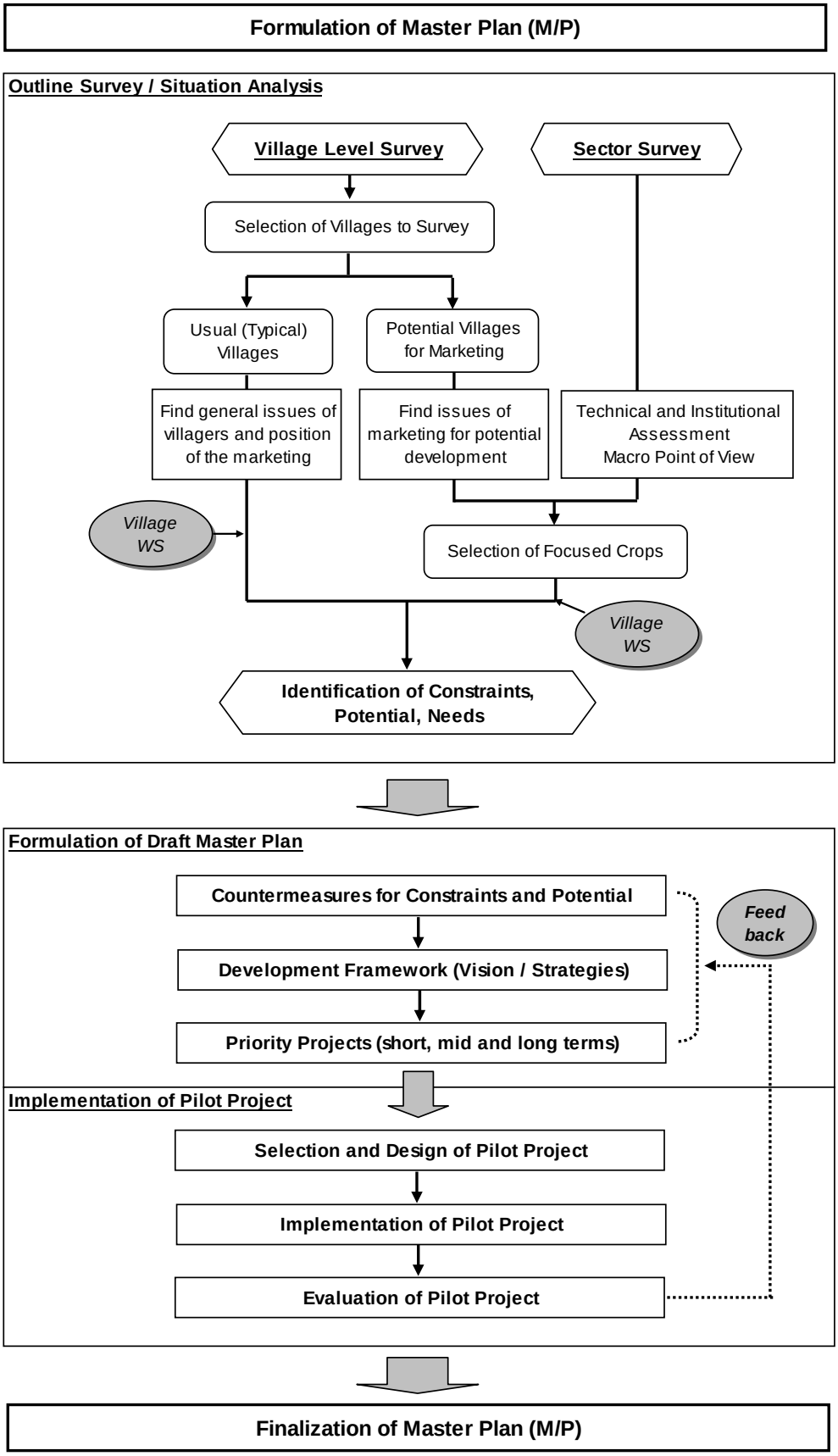


Figure 1.4.1 Process of Formulating Master Plan

1.4.2 Feedback of the Lessons from the Pilot Projects

The Master Plan (M/P) was finalized by reflecting the lessons and recommendation obtained from the implementation of the Pilot Projects. The whole story of the Pilot Projects is attached to the APPENDIX 3 and the way of reflecting the lessons and recommendations from the Pilot Project implementation is incorporated into the M/P as illustrated in the figure below. M/P consists of "PART I Overview", "Part II The Project Governorates", and Part III Master Plan (M/P)" and the lessons from the Pilot is mainly inserted to the M/P by establishing a Chapter titled "Points to Be Considered for Implementing Projects" in the contents of PART III as the lessons and recommendations are mainly concerned about the practical methods for implementing projects. Also the feedback have been put into other Chapters such as "Constraints and Potentials" in PART II, "Development Projects" and "Implementation Set-up" in PART III.

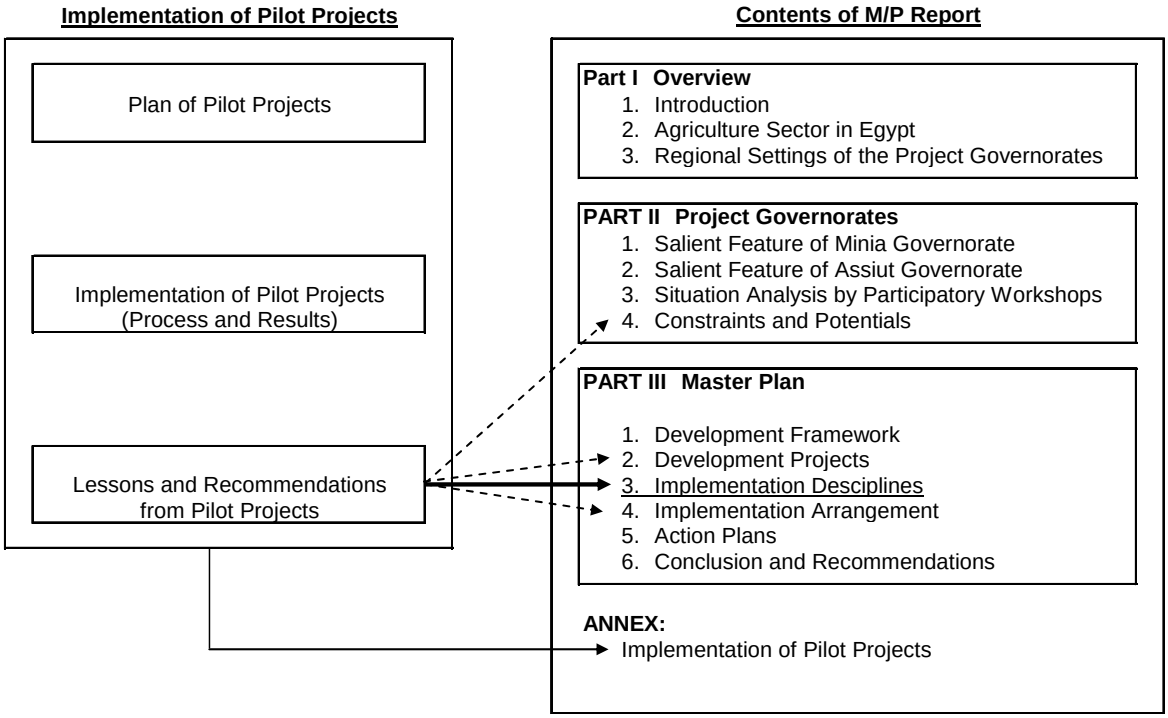


Figure 1.4.2 Feedback the Lessons and Recommendation from the Pilot into the Master Plan

CHAPTER 2 THE AGRICULTURE SECTOR IN EGYPT

2.1 The National Economy and the Agriculture Sector in Egypt

The Government of Egypt has been promoting various economic reforms since 2004, such as the privatization of governmental companies and regulatory reform to attract foreign investment in the country. As foreign currency revenue has increased through the recovery of the tourism industry, the increase of traffic revenue from the Suez Canal and increasing natural gas exports to Europe, economic reform has improved several macroeconomic indicators in the country. While the annual growth rate of real GDP in 2004/05 was 4.5%, the growth rates from years 05/06 to 07/08 recorded around 7%. Despite the global economic recession in 2009, Egypt still recorded a growth rate of 4.7% and 5.1% in the fiscal years 2008/09 and 2009/10 respectively. However, due to the revolution in 2011, the annual economic growth rate in 2010/11 dropped to 1.8% (IMF World Economic Outlook April 2011). GDP per capita has reached US $2,700 in 2010 (World Bank Egypt at-a-glance). On the other hand, economic disparity between the nations' rich and poor classes has emerged, and the lower income group of the nation, with less than US $2 per capita of expenditure per day, has grown to represent 42% of the population in 2008/09 (CAPMAS Statistical Year Book 2011). They have not been able to enjoy the recent economic prosperity.

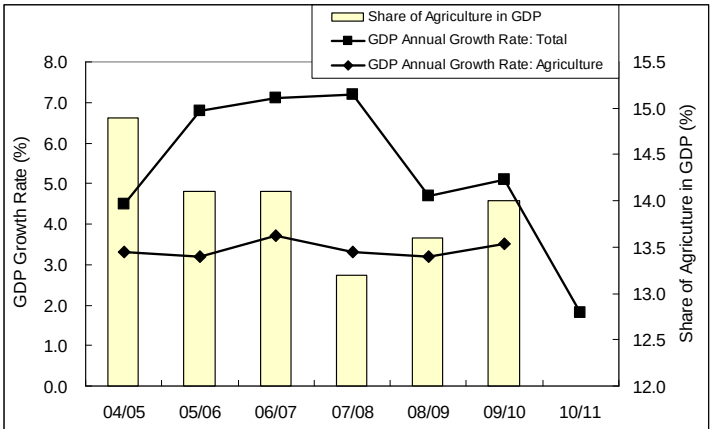


Figure 2.1.1 GDP Growth Rate and Share of Agriculture in GDP

(Source) GDP Growth Rate: IMF World Economic Outlook 2012
Agriculture Growth Rate and GDP Share: Statistical Year Book 2011

The agriculture sector in Egypt plays an important role in the Egyptian economy such as providing food security to the increasing population and garnering profits from the exports of agricultural produce. Annual GDP growth in the agriculture sector has been stable, recorded as 3% to 4% from the years 04/05 to 09/10. The share of the agriculture sector in the overall GDP in 04/05 was 14.9%, and it maintains the share of around 14% to date. The agriculture sector is more significant in job opportunity as the sector still provides 28.3% of working population with job opportunities in 2010 (CAPMAS), and therefore remains important.

Egypt is a unique country, as its water resources are almost entirely dependent on the Nile River due to negligible rainfall. Much desertous land has been reclamed since the 1950s using the riverbed water. These reclamed lands are called "new land." The total cultivated land in 2009 was 8.78 million feddan (3.69 million ha), out of which 6.16 million feddan (2.59 million ha), or 70% of the total cultivated land, is categorized as "old land" spread in the Delta and Nile valley. The total population of the country in 2010 is estimated at 78 million and the cultivated land per capita is calculated as small as 0.11 feddan (0.05 ha). The "new land" in 2009 occupies 2.63 million feddan (1.1 million ha), but the GOE wants to expand this up to 3.4 million feddan (1.43 million ha) in order to keep up with population increase and economic growth.

The major crops in Egypt are wheat, maize, rice and berseem, and these crops occupy 63% of the total cultivated area in 2010 (calculated from CAPMAS Statistical Year Book 2011). However, the self-sufficiency ratios of wheat and maize remain 54% and 53% respectively (Sustainable Agriculture

Development Strategy towards 2030). Egypt is the world's third biggest importer of wheat. As for rice, it is grown intensively in the Delta region and represents one of the exported crops in Egypt. Cotton, a traditional export in Egypt, has been decreasing in its share of cropped area after the liberalization of the cotton market. Cotton growers have thus been directly affected by the international market price. Sugarcane is also an important crop, but because it consumes so much water, the government is encouraging farmers to grow sugar beet instead. Correspondingly, the cultivated area of sugar beet has been increasing.

Many kinds of horticultural crops such as tomato and orange have also been growing. Thanks to the long distance of the country from the north to south, the harvesting times for horticultural crops are extraordinarily long. For example, the harvesting time of tomato could last as long as 255 days throughout the country from the north to south (USAID). Increases of agricultural production and profitability are essential in order to meet the food demands created by the growing population. Increasing production would also create job opportunities and reduce poverty by improving the income of farmers.

2.2 Agricultural Development Plans

The major Agriclutre Development Plans of the Government are the Sixth-National Plan and the Sustainable Agriculture Development Strategy toward 2030 (SADS). As the Sixth-National Plan comes to an end in 2011/12, SADS will be the focus of this study.

2.2.1 Vision and Strategic Goals of SADS

The MALR has formulated a series of strategies of agricultural development since the early 1980s in order to set frameworks to be adopted by the state in realizing developmental goals of the agriculture sector. Following the 1980s and 1990s strategies, the MALR prepared a long term strategy, "The Strategy of Agriculture Development in Egypt until the Year 2017" in 2003. These strategies focused on the following issues:

Table 2.2.2 Agriculture Development Strategies and their Focuses

Strategy	Focus
1980s	Developing the agricultural pricing policies as a mechanism for reallocating resources and providing motivation for farmers to raise production, as well as freeing the agricultural sector from centralized decision making.
1990s	Full deregulation of cotton production, marketing and exports, subsidizing agricultural research, increasing agricultural exports, and reviewing policies and criteria of allotting new lands.
Until 2017	Switching to decentralization in water management, creating a mechanism for recovering part of the expenses of irrigation and maintenance, combating trespassing on agricultural land and achieving self-reliance in producing strategic crops.

In the course of implementing the agriculture development strategy until 2017, the MALR stated the pressing need to reformulate the ongoing strategy due to the rapid changes of the regional and international environments, such as the international food crisis experienced in 2008. Hence, before the target year of the ongoing strategy, the MALR has established a new strategy, "Sustainable Agricultural Development Strategy towards 2030." This strategy has set the following vision, mission and strategic goals:

Vision: "To achieve a comprehensive economic and social development based on a dynamic

agricultural sector capable of sustained and rapid growth, while paying special attention to helping the underprivileged social groups and reducing rural poverty."

Mission: "To modernize Egyptian agriculture, achieve food security and improve the livelihood of the rural populace through the efficient use of developmental resources and the utilization of geopolitical and environmental advantages, and the unique advantages of the different agricultural regions."

Strategic goals:

1. Achieving sustainable use of natural agricultural resources;
2. Increasing the productivity of both the land and water units;
3. Raising the degree of food security in the strategic food commodities;
4. Increasing the competitiveness of agricultural products in local and international markets;
5. Improving the climate for agricultural investment; and
6. Improving the living standards of the rural inhabitants, and reducing poverty rates in the rural areas.

2.2.2 Priority Areas of the Strategic Goals related to IMAP

IMAP framework is particularly related to the strategic goals of No.4 and No.6, which are further describing the strategic priority areas as follows:

(1) Priority areas of No.4 "Increasing the competitiveness of agricultural products in local and international markets":

- Giving greater attention to the improvement of product traits in accordance with the requirements of domestic and foreign markets, as well as marketing and processing requirements;
- Establishing quality standards for agricultural products, and expanding sorting, grading and packaging processes in accordance with such standards;
- Keeping abreast of modern and advanced techniques that support the economic efficiency of agricultural production, particularly as related to the development and use of high-yielding, early-maturing varieties and varieties that can endure unsuitable environmental conditions;
- Using modern information and communication techniques that serve the agricultural sector;
- Developing needed marketing facilities and services and agricultural markets;
- Refining pre- and post-harvest practices to improve product quality;
- Applying modern techniques in monitoring, analyzing and forecasting natural, technical and marketing risks, under a special unit for the management of agricultural risks;
- Linking farmers, particularly small farmers, with markets, including the development of marketing systems and channels, the provision of marketing information and marketing extension;
- Activating and strengthening the role of the government in achieving the right equilibrium between this role and market forces, including exercising supervision on quality standards of both inputs and outputs, strengthening competitiveness, banning monopoly and adulteration, improving consumer protection, as well as supporting civil society organizations; and
- Strengthening institutional and organizational mechanisms that support the linkages between local and external marketing, including contract marketing as well as establishing specific commodity boards and associations.

(2) Priority Areas of No.6 “Improving the living standards of the rural inhabitants, and reducing poverty rates in the rural areas”:

- Diversifying job opportunities and economic activities through encouraging agriculture-related activities and projects in rural areas, such as agricultural inputs and outputs production and marketing;
- Planning new agricultural expansion areas on the basis of diversifying activities and projects, for the establishment of integrated agricultural, manufacturing and service communities;
- Supporting and developing small rural handicrafts and industries suitable to production and environmental conditions, leading to the creation of more job opportunities and improving income levels;
- Maximizing the utilization of agricultural plant and animal residues, and converting them to useful materials and an added economic value (such as fertilizers, animal feed and energy), thus contributing to environmental improvement and cleanliness;
- Supporting and developing small farmers’ institutions, particularly as related to marketing, in order to improve their bargaining powers in buying agricultural inputs and selling their products;
- Involving small farmers in export activities, in order to improve their returns and incomes, and develop their agricultural knowledge and practices; and
- Activating the role of women in the different rural development areas.

2.2.3 Regional Settings

The strategy also outlines the regional plans. Strategies for Upper Egypt (including Assiut) and Middle Egypt (including Minia), where the project area is located, in relation to agricultural marketing are as follows:

- Encouraging farmers to establish voluntary associations for cooperative action, and providing technical support for such associations to be able to participate in development programs and benefit from the successful experiences; (Upper and Middle Egypt)
- Improving organic agriculture to meet export requirements, as well as producing early-maturing vegetable and fruit varieties, as in the case of green beans, grapes and pomegranates; (Upper Egypt)
- Supporting vegetable and fruit marketing facilities through the establishment of grading and packaging stations, as well as the establishment of refrigerated facilities in Luxor, Assiut and Aswan airports; (Upper Egypt)
- Establishing infrastructure and institutional frameworks to enable the region to specialize in the production of medicinal and aromatic plants as well as protected agriculture; (Middle Egypt)
- Reviewing and diversifying agricultural credit lines to cover production and marketing as well as agriculture-related activities; (Middle Egypt)
- Promoting contract farming of vegetables, garlic, onion, oilseed crops and aromatic pastes for manufacturing purposes; (Middle Egypt) and
- Promoting small agricultural projects and income-generating projects for poorer families and establishing a mechanism for providing concessional credit to the groups that do not have enough collateral (Middle Egypt).

CHAPTER 3 PROJECT GOVERNORATES IN REGIONAL SETTINGS

3.1 Demography of the Two Governorates

As of 2010, there are 29 governorates in Egypt and these governorates are classified into four regions: Urban, Lower Egypt, Upper Egypt and frontier. Nine governorates are located in Upper Egypt. The northern part of Upper Egypt is sometimes classified as Middle Egypt, to which Giza, Beni-suef, Fayoum and Minia belong. The south boundary of Minia governorate or the north boundary of Assiut governorate is considered to be the boundary of Middle Egypt. Table 3.1.1 shows population and area by governorate. The total population in Egypt in 2010 is estimated at 77.7 million. The populations of Minia and Assiut governorates in 2010 are 4.5 million and 3.7 million, respectively. Their shares are 5.8% and 4.8% of the total population, respectively.

Table 3.1.1 Population and Area in 2010

Governorate		Population		Area (km2)	
		total	%	total	%
Urban	Cairo	7,126,643	9.2	366	0.0
	Alexandria	4,360,295	5.6	2,300	0.2
	Port-Said	603,787	0.8	1,351	0.1
	Suez	549,337	0.7	9,002	0.9
	Helwan	1,827,147	2.4	7,082	0.7
	6 October	2,779,225	3.6	8,741	0.9
Lower Egypt	Damietta	1,180,931	1.5	910	0.1
	Dakahlia	5,336,650	6.9	3,716	0.4
	Sharkia	5,731,138	7.4	4,911	0.5
	Kalyobia	4,542,030	5.8	1,124	0.1
	Kafr-El-Sheikh	2,800,274	3.6	3,748	0.4
	Gharbia	4,259,378	5.5	1,948	0.2
	Menoufia	3,492,819	4.5	2,499	0.2
	Behera	5,066,577	6.5	9,826	1.0
	Ismailia	1,027,822	1.3	5,067	0.5
Upper Egypt	Giza	3,321,805	4.3	80	0.0
	Beni-Suef	2,466,935	3.2	10,954	1.1
	Fayoum	2,717,681	3.5	6,068	0.6
	Minia	4,471,406	5.8	32,279	3.2
	Assiut	3,697,729	4.8	25,926	2.6
	Suhag	4,005,544	5.2	11,022	1.1
	Qena	3,208,868	4.1	10,798	1.1
	Aswan	1,256,255	1.6	62,726	6.2
	Luxor	484,095	0.6	2,410	0.2
Frontier	Red Sea	306,679	0.4	119,099	11.8
	ElWadi-ElGidid	199,601	0.3	440,098	43.6
	Matrouh	352,231	0.5	166,563	16.5
	North Sinai	373,752	0.5	27,564	2.7
	South Sinai	154,927	0.2	31,272	3.1
	Total	77,701,561	100.0	1,009,450	100.0

Source: Egypt in Figure 2010, CAPMAS

Table 3.1.2 shows population by region in 2000 and 2010. The share of population by region has hardly changed in the past decade, as shown in the table. The average annual growth rate of the last decade in the country is 2.0%, while the growth rate of Upper Egypt was 1.9%. The average annual growth rates of Minia and Assiut were also 2.1% and 1.8%, respectively.

With the high growth rate, the population has increased by about 20% in the last decade. As the governorates in Upper Egypt include large portions of desert areas, the inhabited area in the total governorate area in Upper Egypt is as small as 7.3%; however, the population density per km^2 in these inhabited areas in Upper Egypt is the highest compared to the other regions. The population density in Upper Egypt is about 2,400 per km^2, while the densities of Minia and Assiut are 1,900 per km^2 and 2,300 per km^2, respectively.

Table 3.1.2 Population, Area and Population Density

Governorate	2000		2010		Increase	Growth Rate	Area			Popu. Density per km2	
	No.	%	No.	%	2000 = 1	% /year	Total	Inhabited	%	Total	Inhabited
Urban	11,708,461	18.3	14,467,209	18.6	1.24	2.1	28,842	13,300	46.1	502	1,088
Lower Egypt	27,767,381	43.4	33,437,619	43.0	1.20	1.9	33,749	30,114	89.2	991	1,110
Upper Egypt	23,599,498	36.9	28,409,543	36.6	1.20	1.9	162,263	11,858	7.3	175	2,396
Frontier	899,384	1.4	1,387,190	1.8	1.54	4.4	784,596	23,719	3.0	2	58
Total	63,974,724	100.0	77,701,561	100.0	1.21	2.0	1,234,304	134,263	10.9	63	579
Minia	3,641,920	5.7	4,471,406	5.8	1.23	2.1	32,279	2,412	7.5	139	1,854
Assiut	3,080,612	4.8	3,697,729	4.8	1.20	1.8	25,926	1,574	6.1	143	2,349

Source: Egypt in Figure 2010 and Statistical Year Book 2009, CAPMAS

(*) 6 october governorate was separated from Giza govenorate. To compare the data in 2000 and 2010, 6 october gov. was counted in Upper Egypt in this table.

As for the population in urban and rural areas, according to the population census in 2006, the shares of urban and rural populations in the country are 43% and 57% respectively. In Minia and Assiut governorates, the share of rural population is much higher than the national average, as the shares of rural population in Minia and Assiut are 81% and 74%, respectively. Average family sizes in Minia and

Assiut are 4.6 and 4.8, respectively, slightly higher than the national average of 4.4.

Table 3.1.3 Population by Urban and Rural Areas (2006 Census)

Year	Population (2006 Census)					No. of Household			Ave. Family Size	
	Urban	Rural	Total	Urban	Rural	Urban	Rural	Total	Urban	Rural
Urban	13,006,258	549,805	13,556,063	96%	4%	3,411,248	119,101	3,530,349	3.8	4.6
Lower Egypt	8,706,875	22,515,945	31,222,820	28%	72%	2,202,212	5,352,738	7,554,950	4.0	4.2
Upper Egypt	8,477,382	17,928,870	26,406,252	32%	68%	2,049,141	3,892,482	5,941,623	4.1	4.6
Frontier	783,636	380,348	1,163,984	67%	33%	182,251	80,126	262,377	4.3	4.7
Total	30,974,151	41,374,968	72,349,119	43%	57%	7,844,852	9,444,447	17,289,299	3.9	4.4
Minia	772,758	3,377,639	4,150,397	19%	81%	182,999	727,530	910,529	4.2	4.6
Assiut	884,582	2,533,113	3,417,695	26%	74%	201,585	527,717	729,302	4.4	4.8

Source: Statistical Year Book 2011

3.2 Socio-economy

3.2.1 Poverty Incidence

Upper Egypt enjoyed the height of its prosperity while centered in Thebes, the ancient equivalent to the city of Luxor, and today the areas from Luxor to Aswan are again enjoying the festive atmosphere with plenty of tourists. However, the share of poor population in Upper Egypt is the highest in the country, as about 60% of the poor live in Upper Egypt, and about 50% of the poor live in the rural areas of the Upper Egypt region.

Table 3.2.1 shows the share of poor people by governorate according to the Egypt Human Development Report (UNDP). The poverty line is estimated as the food-based poverty line (the poverty line in monetary terms is different among the years[1]). From the years 2001/02 to recent 2008/09, the poor population has been increasing despite the economic growth during these years. The new number indicates the expanding economic disparity. One reason for this disparity could be the increase in prices, meaning that the poverty line has also risen.

Table 3.2.1 Share of Poor Persons (UNDP)

	Governorate	2001/02		2004/05		2008/09	
		(%)	Rank	(%)	Rank	(%)	Rank
Urban	Cairo	5.7	19	4.6	21	7.6	18
	Alexandria	7.1	16	8.0	15	6.4	20
	Port Said	1.0	22	7.6	16	4.4	21
	Suez	2.2	21	2.4	23	1.9	22
Lower Egypt	Damietta	0.1	23	2.6	22	1.1	23
	Dakahlia	14.4	10	7.0	17	9.3	17
	Sharkia	12.3	12	28.2	6	19.2	10
	Kalyoubia	7.7	14	11.2	14	11.3	14
	Kafr El-Sheikh	5.2	20	13.2	11	11.2	15
	Gharbia	6.6	17	6.1	19	7.6	18
	Menoufia	18.2	8	17.5	9	17.9	13
	Behera	7.6	15	20.5	8	23.5	8
	Ismailia	5.8	18	6.4	18	18.8	11
Upper Egypt	Giza	12.6	11	13.1	12	23.0	9
	Beni Suef	45.7	2	45.4	2	41.5	3
	Fayum	30.1	4	12.0	13	28.7	7
	Minya	**20.6**	**7**	**39.4**	**4**	**30.9**	**6**
	Assuit	**50.5**	**1**	**60.6**	**1**	**61.0**	**1**
	Suhag	38.6	3	40.7	3	47.5	2
	Qena	21.7	6	33.7	5	39.0	5
	Luxor	28.7	5	6.1	19	40.9	4
	Aswan	18.2	8	23.9	7	18.4	12
	Flontier Gov'ts	9.9	13	14.5	10	11.1	16
	National	16.4		19.6		21.6	

Source: UNDP Egypt Human Development Reports 2008 and 2010

Also the data reveals that the worst five governorates are always found in Upper Egypt. Assiut governorate has been ranked the worst since 2001/02 and the share of poor persons has been increasing. The share of the poor in Assuit in 2008/09 numbers 61.0%, which is significantly higher than even the second worst governorate. The share of poor people in Minia in 2008/09 is 30.9%, ranked as the sixth worst. The rate for that year in Minia improved from the year 2004/05, when the rate was 39.4%, the fourth worst in the country.

As for the poverty gap between urban and rural areas, the data is available only by region. Table 3.2.2 shows the share of poor people by urban and rural areas. In each region, the share of poor

[1] Lower (food-based) poverty line in 2004/05 is estimated at LE1,116 per person per year, while the one in 2008/09 is estimated at LE1,648.

people in rural areas is significantly higher than in urban areas, especially the share of poor people in rural Upper Egypt, which is the highest in the region. As the national poverty ratio has gotten worse in recent years, the share of poor people by region has also worsened. In Upper Egypt the share of poor people in 2008/09 is observed as 1.33 times that of 2001/02.

Table 3.2.2 Poverty Gap between Urban and Rural Areas

Governorate	Poor Persons (%)				Comparison	
	2001/02		2008/09		2008 / 2001	
	Urban	Rural	Urban	Rural	Urban	Rural
Urban Governorates	5.7	-	6.9	-	1.20	-
Lower Egypt	6.3	11.3	7.3	16.7	1.17	1.48
Upper Egypt	19.3	32.8	21.3	43.7	1.10	1.33
Frontier Governorates	4.0	18.0	4.8	23.2	1.21	1.29
National	9.6	21.2	11.0	28.9	1.15	1.36

Source: Egypt Human Development Reports 2004 and 2010 (UNDP)

3.2.2 Employment Opportunities in Rural Areas

Minia and Assuit are located between Cairo and Luxor, with distances of 250 km and 400 km away from Cairo, respectively. The areas are rather marginalized due to less tourism resources and industries compared with other regions. To fill the tourism gap, the agriculture sector plays an important role in the two governorates for employment opportunities. The shares of the workforce in the agriculture and hunting industries in 2010 in Minia and Assiut were 51.3 % and 36.7%, respectively, as shown in Table 3.2.3. These numbers, especially in Minia, are higher than the national average of 28.3%. Assiut City[2] is the biggest city in Upper Egypt. This city provides employment opportunities other than farming. It is remarkable that as the whole country, the share of the workforce in agriculture and hunting has increased significantly in 2008 compared to 2003. The settlement scheme in new lands may have contributed to these statistics, as the workforce in agriculture in frontier governorates has significantly increased between those years.

Table 3.2.3 Share of Employed Persons by Economic Activities

Governorate	Agriculture & Hunting			Industry			Services		
	2003	2008	2010	2003	2008	2010	2003	2008	2010
Urban	1.0	1.6	3.1	28.9	33.2	33.2	70.2	65.3	63.7
Lower Egypt	31.7	38.2	33.6	19.6	21.0	23.7	48.7	40.8	42.8
Upper Egypt	37.3	38.2	34.6	18.1	21.8	24.4	44.6	40.1	41.0
Frontier	6.6	25.2	20.3	13.8	9.9	15.7	79.6	64.9	64.0
National	27.6	31.8	28.3	20.7	23.1	25.4	51.7	45.1	46.3
Minia	60.5	60.5	51.3	10.1	13.7	18.0	29.4	25.7	30.7
Assiut	37.8	35.3	36.7	16.5	22.7	22.3	45.7	42.0	41.0

Source: Statistical Year Book 2003, 2009 and 2011, CAPMAS

Note: Helwan and 6th October Governarate have been created since 2008. Here included the data of Helwan to Cairo (Urban) and 6th October to Giza (Upper Egypt)

Table 3.2.4 shows unemployment rates in 2002 and 2006. Throughout the country the unemployment rates are lower in rural areas compared to urban areas. This indicates that self employment in agriculture contributes to the lower rate of unemployment in rural areas. Although the cash income status should be lower in rural areas, as the share of poor people is higher in rural areas, it is evident that agriculture provides work for the population. The unemployment rates in urban Minia and Assiut are relatively higher than the national level, while the unemployment rate in rural Minia is lower than the national level. Also unemployment rates tended to decrease in 2006 compared to 2002.

Table 3.2.4 Unemployment Rates

Governorate	Unemployment (%) (2002)		Unemployment (%) (2006)	
	Urban	Rural	Urban	Rural
Minia	15.1	6.0	10.8	4.5
Assiut	19.1	12.7	12.2	8.2
Urban Gov't	7.8	-	10.8	-
Lower Egypt	14.3	10.6	10.9	8.8
Upper Egypt	12.4	7.8	12.4	8.5
Frontier Gov't	9.6	2.0	7.0	5.3
National	11.0	9.5	10.9	8.0

Source: Egypt Human Development Reports 2004 and 2008 (UNDP)

[2] The population of the Assiut District is 891,232.

3.2.3 Living Conditions

Basic infrastructures such as electricity and water have been well developed all over the country. Almost all villages have been electrified so far. Table 3.2.5 shows the share of households with access to piped water and basic sanitation. Installation of piped water shows a high rate in 2006, while the installation of sanitation remains quite low. The shares of households with piped water in rural Minia and Assiut in 2006 are 87.5% and 94.9%, respectively. Villages in Minia have been slightly delayed in installing piped water. As for sanitation, the shares of households in rural Minia and Assiut in 2006 are still only 4.8% and 2.4%, respectively.

Table 3.2.5 Rural Infrastructures

Governorate	% of Households with Access to						
	Piped water			Piped Water (2006)		Sanitation (2006)	
	1976	2001	2006	Urban	Rural	Urban	Rural
Minia	58.9	82.3	89.7	98.7	87.5	44.3	4.8
Assiut	58.4	83.9	96.0	98.8	94.9	28.8	2.4
Urban Gov't	92.3	99.8	99.1	99.1	-	90.8	-
Lower Egypt	69.2	89.6	95.0	98.7	93.5	86.0	33.7
Upper Egypt	60.4	85.9	94.7	99.0	92.5	67.2	11.7
Frontier Gov't	47.8	90.0	84.5	92.5	66.2	62.1	21.1
National	70.9	91.3	95.5	98.8	92.9	82.5	24.3

Source: Egypt Human Development Reports 2004 and 2008 (UNDP)

Table 3.2.6 summarizes some social indicators such as life expectancy, infant mortality, education enrollment and adult literacy. The table indicates that the infant mortality and adult literacy rates in the two governorates are found to be especially worse than in other regions. Low adult literacy is considered especially significant, as the rates in rural Minia and Assiut in 2006 are around half of the population, but this number may improve in the near future, as basic and secondary enrollment have both been increasing.

Table 3.2.6 Social Indicators: Life expectancy, Infant Mortality, Education Enrollment and Literacy

Governorate	Life Expectancy at Birth (years)			Infant Mortarity (per 1000 live births)			Combined basic and Secondary Enrollement (%)			Adult literacy rate (+15)			Literacy (+15) (%) (2006)	
	1976	2002	2007	1961	2002	2008	1961	2002	2006	1960	2002	2007	Urban	Rural
Minia	52.1	68.3	69.3	108.0	33.4	24.0	35.2	84.5	84.4	18.1	52.2	58.7	75.7	52.4
Assiut	53.2	69.7	70.7	107.0	42.5	35.2	37.8	82.3	80.8	17.4	55.0	60.9	75.5	54.4
Urban Gov't	57.6	71.1	72.2	147.0	29.9	19.5	59.1	98.2	79.8	46.9	85.4	81.5	80.5	-
Lower Egypt	55.6	70.5	71.5	93.0	18.1	12.6	38.9	91.4	79.9	23.1	68.6	70.3	78.8	65.8
Upper Egypt	53.0	69.2	70.2	102.0	29.2	24.5	36.5	86.1	83.8	17.8	59.7	64.4	76.9	57.1
Frontier Gov't	-	70.1	71.1	124.0	21.2	14.7	-	77.8	90.6	22.5	74.3	77.2	82.2	62.5
National	55.0	70.1	71.7	108.0	24.5	18.0	42.0	90.1	89.4	25.8	69.4	70.4	79.1	62.0

Source: Egypt Human Development Reports 2004, 2008 and 2010 (UNDP)

3.3 Agriculture and Agricultural Marketing

3.3.1 Agriculture

Agriculture in Minia and Assuit is mainly practiced in the Nile valley (old land). The cultivated areas in Minia and Assuit in 2010 were 472,771 feddan (198,564ha) and 345,260 feddan (145,009ha) respectively, 89% of which belongs to old land. The shares of cultivated area in Minia and Assiut out of the national total cultivated area are 5.4% and 3.9%, respectively. Cropping intensities in the two governorates are 187% and 191% respectively, higher than the national average of 179%.

Table 3.3.1 Cultivated and Cropped Areas (2010)

Governorate	Category	Cultivated Area		Share to National	Cropped Area	
		(fed)	(Share)		(fed)	(Share)
Minia	Old Land	422,792	89.4%	5.4%	809,020	191%
	New Land	49,979	10.6%		76,608	153%
	Total	472,771	100.0%		885,628	187%
Assuit	Old Land	307,035	88.9%	3.9%	605,106	197%
	New Land	38,225	11.1%		53,488	140%
	Total	345,260	100.0%		658,594	191%
Lower Egypt	Old Land	3,819,858	84.4%	51.8%	7,638,246	200%
	New Land	708,348	15.6%		1,176,304	166%
	Total	4,528,206	100.0%		8,814,550	195%
Upper Egypt	Old Land	2,279,612	85.0%	30.7%	4,258,399	187%
	New Land	401,555	15.0%		558,568	139%
	Total	2,681,167	100.0%		4,816,967	180%
Frontier	Old Land	-	-	17.3%	-	-
	New Land	1,513,496	100.0%		1,989,341	131%
	Total	1,513,496	100.0%		1,989,341	131%
National	Old Land	6,117,723	70%	100%	11,920,153	195%
	New Land	2,623,399	30%		3,724,213	142%
	Total	8,741,122	100%		15,644,366	179%

(Source) MALR 「Study of The Indicators Agricultural Statistics」(2010)

Major crops in the two governorates are traditional crops, namely maize and sorghum in the summer

season and wheat and berseem in the winter season. These crops occupy more than 80% of the cropped area in each season. Highly profitable crops (non-traditional crops), such as vegetables, are scarcely cultivated. Figure 3.3.1 shows the share of the vegetable crop in the winter and summer seasons by region in 2010. The share of traditional crops is about 80% throughout the nation except for in the frontier governorates, where the lands are mostly new, and therefore more commercial agriculture is practiced. However, the lower share of vegetable crops in Minia and Assiut is significant compared to Lower Egypt. Shares of vegetables in winter and summer in Lower Egypt are 20% and 23%, respectively, while the share of vegetable crops in Minia is around 10% for both summer and winter and the share of vegetable crops in winter and summer in Assiut is only 8% and 7%, respectively. To summarize, the share of traditional crops is very high in Upper Egypt and low-profit agriculture has been practiced.

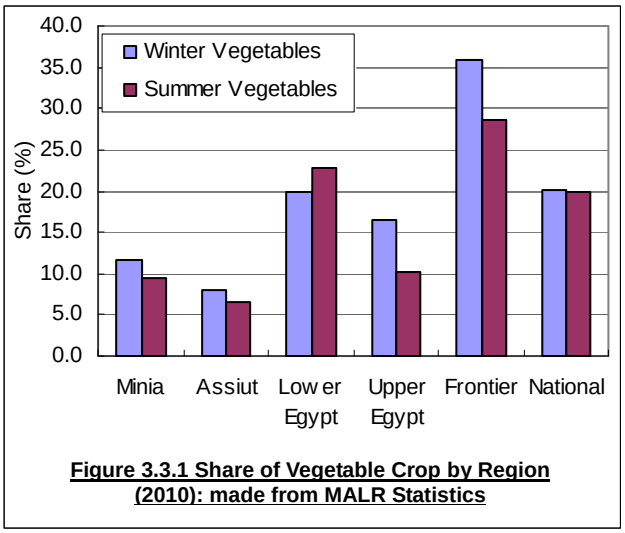


Figure 3.3.1 Share of Vegetable Crop by Region (2010): made from MALR Statistics

On the other hand, Upper Egypt is a producing center of medicinal and aromatic plants. The region produces these crops extensively, though their cropped areas are small. Production of pomegranates in Assiut represents 90% of the country's total. The project governorates have the potential to be centers of production for some specialty crops, based on their geographical advantages.

Most of the farmers in the rural areas, where the poor population is concentrated, are small-scale ones. Land owners with holdings of less than 3 feddan (1.26ha) in Minia and Assuit numbered 86.6% (250,340households) and 88.1% (339,466HH) respectively in 2005, as shown in Table 3.3.2. These numbers appear outstanding compared to the number in Lower Egypt, which is 71.5%. Furthermore, farmers with less than 1 feddan (0.42ha) in Minia and Assuit number 60.7% and 76.9% respectively, much higher than that of Lower Egypt, which is 47.0%. It is also said that around 20% of the rural population are landless (tenant) farmers. The total farmland, which belongs to the farmers with less than 3 feddan in Minia and Assiut numbered 43.0% (177,888fed) and 42.5% (138,146fed) respectively. This indicates the polarization between large scale and small scale farmers.

Table 3.3.2 Share of the Number of Land Owners by Holding Size (%) (2005)

Land Holding	Urban	L. Egypt	U. Egypt	Frontier	National	Minia	Assiut
Less 1 fed	68.4	47.0	61.3	6.7	53.1	60.7	76.9
1 < 2	6.5	15.2	14.2	5.6	14.6	17.2	8.3
2 < 3	3.3	9.3	8.1	8.9	8.7	8.6	4.1
Sub-total (<3)	**78.1**	**71.5**	**83.6**	**21.2**	**76.5**	**86.6**	**89.2**
3 < 4	4.5	5.8	5.2	13.0	5.5	4.7	4.5
4 < 5	4.3	4.1	3.5	30.6	3.9	2.9	2.2
5 < 10	5.8	10.6	3.2	32.4	7.5	3.9	1.6
10 < 20	3.4	3.6	2.0	2.8	2.9	1.1	1.1
20 < 50	1.0	2.3	1.5	0.0	2.0	0.6	1.0
50 < 100	0.1	1.4	0.6	0.0	1.0	0.2	0.3
morethan 100	2.8	0.7	0.4	0.0	0.6	0.0	0.0

Source: Statistical Year Book 2011, CAPMAS

3.3.2 Distribution System of Agricultural Produces

Farming practices in the Minia and Assiut governorates are not very different and the distribution structures for their agricultural crops are also not very different from each other.

(1) Cereals (wheat and maize)

Aish baladi, Egyptian local bread made of wheat and produced in winter, and maize, which is produced in the summer, are the two staple foods of Egypt, so wheat and maize are the most important main crops in Egypt as well as in the project area. Distribution structures for these main crops are regulated by the government, and they are traditional. Some of the crops, such as soybean and barley, are the same as those. The Bank for Development and Agriculture Credit (BDAC)[3] plays the role of distributing these cereals, and the steady selling prices give financial relief to the farmers planting those crops. However, since the government promoted the free market in the 1996 agreement with IMF, traders and/or middle men have been doing business in these distributions. The special crop cooperatives used to have these roles, but nowadays, its role is limited.

Farmers used to ship their products to general cooperatives and specialized cooperatives; however, at present, they are shipping their products through traders or by themselves to the BDAC, which has village banks, rather than to cooperatives, because the MALR reformed their agricultural distribution system. In fact, wheat is not shipped through cooperatives anymore in the Minia governorate.

The BDAC can provide financial services such as loans for agricultural inputs, so the MALR strengthens the role of the BDAC instead of cooperatives in terms of wheat distribution. The BDAC has enough storehouse, storage and collection places for wheat. Storing of wheat takes three to four months from collection to shipment. The quality of wheat can deteriorate during storage at the collection places because it is mostly stored in open spaces.

If the farmers do not use the traders, they bring the products to the BDAC stores using donkey carts or hired trucks or tractors. The BDAC has stores in the villages and districts to give these services. The BDAC does not offer the transporting service from the farm to the store; the traders handle this instead. On the other hand, the BDAC transports and sells wheat to the flour factories.

In almost all villages, there are small mills. Farmers store their wheat in their own houses, and they use the mills when they bake *aish baladi*. In some cases, wheat producers sell their products to landless villagers. There are two large milling factories owned by the government in Minia and Assiut governorates: the Upper Egypt Mills Company in the Beni Mazar district in Minia, and the Middle Egypt Mills Company in Assiut. The milling capacity of these companies is 350 tons per day and 500 tons per day each, respectively. Usually, 20% of white maize is mixed with *aish baladi*. One mmg iron citrate per kg is added to the flour milling to prevent iron deficiency among the populace, which is a common affliction in the Upper Egypt region.

Although the milling factories are under the umbrella of the Ministry of Investment, they contract with the Ministry of Social Solidarity. Whole wheat and maize are inspected and weighed for their amount in the milling factories. The data of these processes is given to the Ministry of Social Solidarity, and then the money is paid to the farmers, the BDAC, and middlemen by the national treasury. If farmers borrow the production cost from the BDAC, it will be deducted from the account of the Bank.

Consumers of *aish baladi* are categorized into two groups: “subsidizers” and “non-subsidizers.” Qualified subsidizers will be registered by governmental officers and the Ministry of Social Solidarity, and they are able to get access to cheap *aish baladi*. Non-subsidizers, on the other hand, have to pay

[3] The BDAC is a branch of the PBDAC (Principal Bank for Development and Agriculture Credit). The BDAC is usually called the “village bank.”

three or four times more for *aish baladi* than subsidizers.

Egypt is ranked second or third in the world for wheat imports. Out of the total consumption of wheat in Egypt, around 40% is imported. Although the price of wheat is easily affected by the international price, it is difficult to pass on the higher cost to the consumer price. These situations indicate that the government of Egypt should carefully take food security into consideration.

In Assiut Governorate, there is a silo which is capable of storing 7,200 tons of wheat. This is the amount consumed by about 633,000 people in one month, when the food supply quantity is 136.6 kg per capita per year based on 2007 data (FAOSTAT). On the other hand, there is no silo equipment in the Minia governorate.

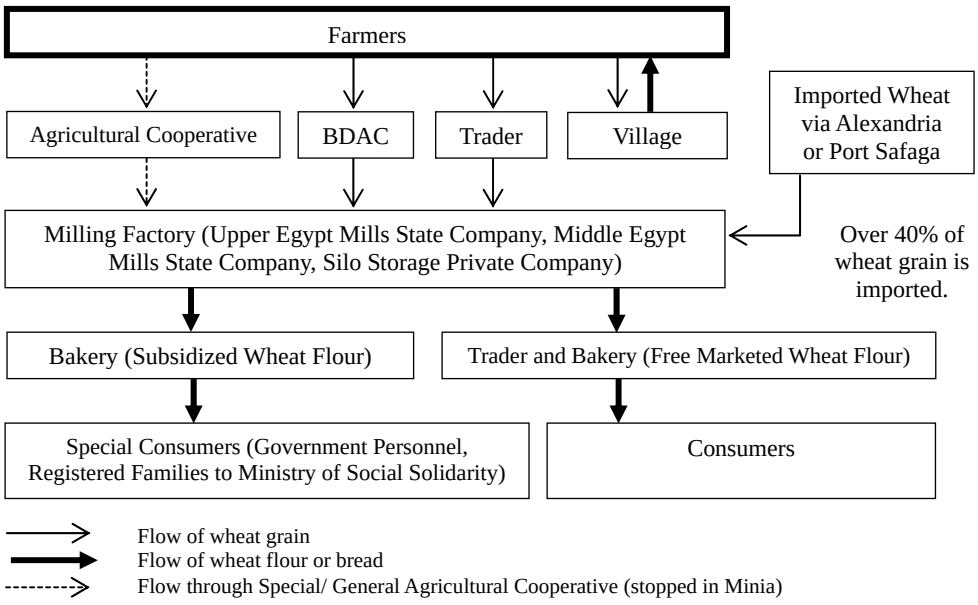


Figure 3.3.2 Distribution Channel of Wheat

(2) Horticultural Crops (Fruits and Vegetables)

The distribution of fruits and vegetables is based on traders and wholesalers. There are some processing facilities and companies in the project area, such as a garlic and onion slicing company, cold storage facilities for potatoes, grading and pre-cooling companies for fruits, and companies that produce pickles all contributing to distribution of these crops for farmers and traders. However, these facilities and companies are for only the initial stages of processing.

Harvest seasons for even the same products are different from place to place in the whole country because the latitude of each production area is different. In Assiut city, there is a large wholesale market managed by the local government. The local government prepares the land and warehouses in the market, and they provide these facilities to wholesalers. Wholesalers contact first middlemen by using mobile phones, and then they decide the dealing volume and the prices of fruits and vegetables, along with the prediction of the sales volume on those days. Products are brought to the market until 5 a.m., and they are sold by way of auction per kg. Some middlemen can buy products with accrued transaction, while other middlemen sell their products to retailers mainly with through cash transactions. The wholesale market is busy at around 6 a.m., because the second group of middlemen must take their products, making transaction traffic slow. Transaction volume is approximately 100 to 200 tons a day.

On the other hand, there is no wholesale market organized in the Minia governorate. In the city, there are some markets which combine retail and wholesale. It is difficult for large trucks to enter these small markets, and the transaction amounts for fruits and vegetables from other governorates are also small. Some special wholesale markets exist in the outskirts of the city operated by the privates, such as those for watermelon, onion, garlic, etc. Making a new, large scale, wholesale market in the suburbs of Minia city would be beneficial for both traders and consumers.

At the district level, most people sell their products on the roadside, transported by horses and donkeys. There are also kinds of wholesale market operated by private wholesalers known as “Shona” or “Wekala”. Usually second middlemen carry their products to the district level and deal with retailers. At the village level, retailers purchase fruits and vegetables from retailers in the towns, and sometimes retailers from adjacent villages come to sell fruits and vegetables.

The wholesale margin is about 20 percent. The first middlemen have 5-10 percent, the second middlemen have 5-20 percent, and retailers get around 25 percent. Margin rates become low when supply exceeds demand and the transaction timing is late. The most-distributed products in the project areas are tomatoes in winter and summer, eggplants in winter and summer, cucumber in summer, okra in summer as well as vegetables and fruits, onions in winter and summer, potato in winter and summer, garlic in winter, sweet potato in summer, and taro in summer as well as root crops.

Regarding leaf vegetables, there are cabbages in winter and summer, molokheyia in summer, cauliflower in winter, as well as a small amount of parsley and rocket in winter. Traditionally, Egyptian people do not prefer to eat leaf vegetables, since they are difficult to keep fresh in this arid climate without refrigerators, which are not popular in the local areas. Fruits such as grapes, mangos, and bananas are supplied stably.

There is a specific distribution route for exports. The first middlemen select and purchase products, and they sell them to agro-processing companies and/or exporters. Sometimes, they use the second middlemen. This distribution includes grapes (raw), pomegranates (raw), garlic (raw), and onion (dried powder). Producers of these products are concentrated in specific areas. These areas are gradually being formed as special production areas at the village and district levels.

Specialized cooperatives were involved in the sales of these special products until the 1980s, but farmers now sell their products to middlemen directly because of the promotion of the free market by the government (and because of farmers’ financial interests). Take onion, for example. The middlemen rent cold storage owned by specialized cooperatives, but they do not get involved in sales at all. Their role is just to operate the facilities.

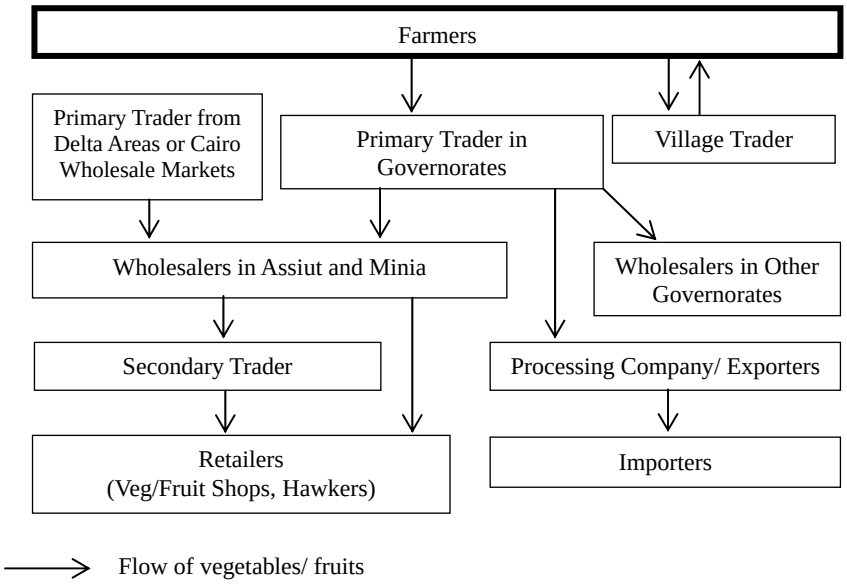


Figure 3.3.3 Distribution Channel of Fruits and Vegetables

Although traders and/or middlemen play important roles in balancing supply and demand, they charge commissions at each transaction level. This seems to be one of the main causes of the huge difference between retail prices and production prices.

(3) Medical and Aromatic Crops

The Minia and Assiut governorates have the most suitable climate for planting medical and aromatic crops in Egypt. Farmers in these areas grow funnel, cumin, anise, etc., in winter, and basil, jojoba and hibiscus in summer. The distribution of these plants is conducted by the traders, who come to buy the field and/or come to make contract farming. These medical and aromatic plants are planted still in limited, small scale areas, except in the "new land." However, some of them, such as marjoram and basil, are planted in wider areas in the specific regions of the governorates.

Small scale farmers are widely dispersed throughout the areas and individually sell small amounts of products to the traders. On the other hand, large scale farmers, who mostly grow in the new land, directly sell to the processing companies located in Cairo or Alexandria. Sometimes the traders participate in this transaction. Farmers usually dry their products before selling.

There is a special crop for export, which is basil. It is grown in the Abnoub district in Assiut. Basil in this district is dried on the ground, traded by the first middlemen, pre-graded by the second middlemen, processed (made into powder) by the processing companies in the Fayum, Cairo and Alexandria, and finally exported by the exporters. Local consumption is low.

Some crops are increasing in production, but the yearly climate change, limited, small scale area and limited irrigation water inhibit expansion. Moreover, there are many constraints for farmers in the area. Research and extension services for these crops are limited because of the vast amount of small scale planting areas, as well as the necessity of crop rotation. Furthermore, there are many steps for distribution and many traders are involved in these transactions. There are also less government supports for the handling and trading of these crops.

(4) Industrial Crops

Cotton and sugarcane have traditionally been cultivated and promoted; however, cotton cultivation area has decreased dramatically because of the falling international price. Instead of cotton, sugarcane and sugar beet have become the most important crops currently. The food supply of sugar (raw equivalent) is 23.1 kg a year per capita in 2007 (FAOSTAT). This amount exceeds domestic production, and 23.4% of total consumption depends on imports.

Sugarcane factories are concentrated in Upper Egypt; one of the factories is in the Abo Kurkas district in the Minia governorate. Although the price of sugarcane is decided by the government after planting, sugar processing factories decide the price of sugar molasses before planting, so production risk is low. Sugar beet planting requires less irrigation water and the government is promoting a change from sugarcane to sugar beet. This is one of the reasons for the increase of sugar beet production.

Sugarcane can be processed to make liquid sugar as black homey in villages, and it is sold in local markets. By contrast, sugar beet is not suited for small scale processing like sugarcane because the taste of liquid sugar made from sugar beet is not good. According to the associate dean of faculty in the agricultural department at Assiut University, factories are encouraged to contract farming in order to get materials stable and increase the factories' operating ratio. Factories usually cover

transportation costs from factories to the cultivation area. If the cultivation areas are far from factories, they sometimes reject to deal with farmers in such areas. Therefore, there is a huge demand to construct new factories in more areas, especially marginalized areas in the Assiut governorate.

(5) Fodder Crops

Berseem is produced during the winter season as a feed crop and short clover is produced during the summer season in many areas. Berseem, which is a legume, is an indispensable crop for increasing soil fertility and crop rotation for high intensification. However, large amounts of berseerm planting areas are affected by higher priced crops. Small scale farmers use these crops to feed their cows and donkeys. Now the amount of these animal feed crops is not enough to distribute outside villages. The number of animals increased recently, so farmers are more likely to use forage, which is produced by factories.

A governmental animal feed crop factory is in the El-Edwa district in Minia, and a private factory is in the Abnoub district in the Assiut governorate. The private factory utilizes local materials such as white maize, wheat bran, wheat straw, cotton seeds, rice bran, rice straw, molasses, and lime. On the other hand, the factory run by the government uses yellow maize, soybean, cotton seeds, molasses, lime. Vitamins, maize and soybean are imported as materials. The amount of production has increased in both factories. They do not deal with farmers' groups and agricultural cooperatives directly, but the private company sells their products to specific middlemen. The governmental factory deals with national farms directly.

In such situations, farmers have difficulties getting cheap animal feed. Therefore, it is necessary to utilize local materials and crops to create high nutrient animal feed. There is a necessity to expand the improved silage skills for farmers to reduce the fodder planting area and increase the higher price crop areas.

3.3.3 Pricing for Agricultural Produce

Pricing for agriculture produce is different among cereals, horticulture crops, medical and aromatic crops, and industrial crops. Regarding wheat, the MALR sets the governmental official purchase price, and the Ministry of Social Solidarity pays the official price to farmers who shipped their produce to the factory under the Ministry of Investment. The price of wheat grain at CIF-Alexandria was 180LE/ardab in August 2010; nevertheless, 280 LE/ardab is typically being paid to producers in 2010. This system is a form of government support to the public, as the Ministry of Social Solidarity provides cheap breads to registered low-income households. In 2008, the international wheat price suddenly soared, so the government tried to increase the price of bread (Figure 3.3.4 shows the price of wheat in Minia). As a result, the supply of wheat decreased and raised a riot. From this point of view, the supply of stable and cheap food is one of the most important roles for the government.

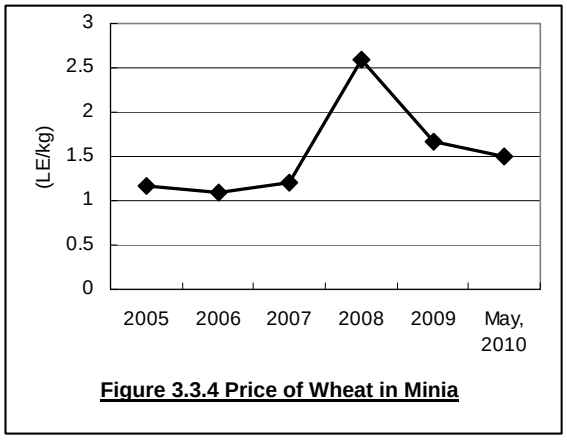


Figure 3.3.4 Price of Wheat in Minia

In 2008, the international wheat price increased sharply, multiplying 2.17 times compared to the previous year, while the amount of production decreased since 2006. The fluctuation of international price strongly affects government intentions and food security. The production cost of wheat, including fertilizer, labor, and fuel, has also increased, so there are few incentives for farmers to increase wheat production. Pricing of maize and some legumes such as soybean and barley are almost the same as that of wheat. However, their prices are changing gradually faster than wheat because of the weaker government interference and many traders' participation.

In terms of industrial crops, sugarcane and sugar beet are important crops in Upper Egypt. The purchase price of these crops is decided by the government with contingency. The sugar processing factory in Abo Korkus contracts the basic price and the amount with farmers, middlemen, and agricultural cooperatives. Both crops are inspected for their sugar content when carried in the factory, and then prices are finally decided. The factory covers transportation costs, so the factory is less likely to contract with farmers in the southern part of the Assiut governorate, since the transportation cost is much higher than areas near the factory.

Wholesalers and middlemen are playing important roles for pricing domestic horticulture crops, including medical and aromatic crops. Specialized cooperatives priced horticulture crops until 1980s, and their prices were stable. After the market liberalization, however, the prices depend on the balance between supply and demand. Consequently, the prices have wildly fluctuated, especially for crops consumed in large amounts such as tomato, potatoes and garlic. These prices sometimes inflate more than five times within a year. The price of vegetables tends to rise during July and August, off-season, and during Ramadan. Many wholesalers state that the trend of price fluctuation is different every year so that prediction of the prices is difficult.

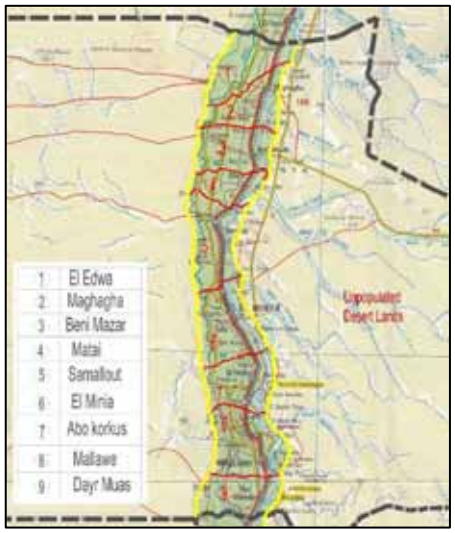
Also, it is difficult for the government to collect price information, because middlemen do not want to tell the market information or they will lose business opportunities. However, you can find the price signs for almost all crops at retail markets and retail shops in the city. These signs are public information, so data collection is easy. It is expected that the wholesale market regulations or laws would be established and markets would be organized by the local government, as well as making public information available on the prices and volumes of crops handled at the wholesale markets, to give estimates of reasonable prices to all stakeholders.

PART II: THE PROJECT GOVERNORATES

CHAPTER 1 SALIENT FEATURES OF MINIA GOVERNORATE

1.1 General Features of the Governorate

The Minia governorate is situated between the Beni-suef governorate in the north and the Assiut governorate in the south. The governorate is characterized by its rural style. Minia is known as the beautiful bride of Upper Egypt. The governorate capital, Minia City, is 250 km from Cairo. The total area of the governorate is 32,279 km^2, out of which 2,412 km^2 or 7.5% is inhabited. The population in 2010 is estimated at 4.47 million. The population density per km^2 for inhabited area is therefore calculated at 1,854. The inhabited area, formed along the Nile valley and the boundary of the governorate from the north to the south, is around 100 km and the inhabited land has been expanding to the east and west deserts. The width of the inhabited area in the governorate is about 20 to 25 km.



For administrative structure, the governorate is comprised of districts, which are also divided into local units, or townships, the lowest administrative unit. The local unit is comprised of villages. A village is formed with a mother village and hamlets surrounding it. There are 9 Districts, 70 local units / townships, 342 villages and 1,429 hamlets in Minia. Population per village in 2006 is estimated at 9,876. The governorate capital belongs to Minia District, which is located in the center of the governorate. Table 1.1.1 shows the list of the Districts in the governorate.

Table 1.1.1 Districts of Minia Governorate

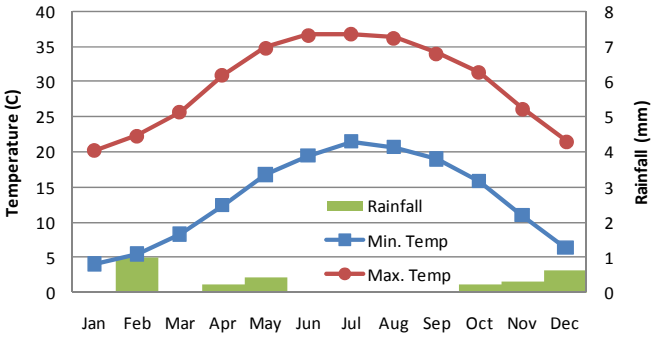
District	No. of Local Unit	No. of Village	No. of Hamlet
El Edwa	5	24	N.A.
Maghagha	7	39	139
Beni Mazar	8	41	269
Matai	6	26	115
Samallout	10	48	264
El Minia	9	42	272
Abo Korkus	9	46	224
Mallawe	10	49	116
Dayr Muas	6	27	N.A.
Total	70	342	1,429

Source: Minia Agriculture Directorate

1.2 Natural Conditions

Agriculture in Minia Governorate is mainly practiced in the Nile valley (old land), where a canal network provides irrigation water. The desert has been reclaimed since the 1950s by utilizing groundwater. These reclaimed lands are called New Land. The dry climate in Minia is categorized in the desert climate. Rainfall occurs very rarely, and the average annual rainfall is as little as 3 mm. July is the hottest month, when maximum and minimum temperatures are 37 °C and 21 °C, respectively. January is the coldest month, when maximum and minimum temperatures are 20 °C and 4 °C, respectively. Difference between day and night temperatures reaches from 15 °C to 18 °C throughout the year.

Figure 1.2.1 Temperature and Rainfall in Minia



Source: MSN Weather

1.3 Agriculture

1.3.1 Land Use

The total area of farmland in the Minia governorate is 472,771 feddan (198,564 ha), consisting of 422,792 feddan (89 %) in the old land and 49,979 feddan (11 %) in the new land. The cultivated area for winter crops is 402,186 feddan or 85 % of farmland, and the cultivated area for summer crops is 374,899 feddan or 79 % of farmland. The overall cropping intensity, including winter crops, summer crops and others, is as high as 187 % in the Minia governorate.

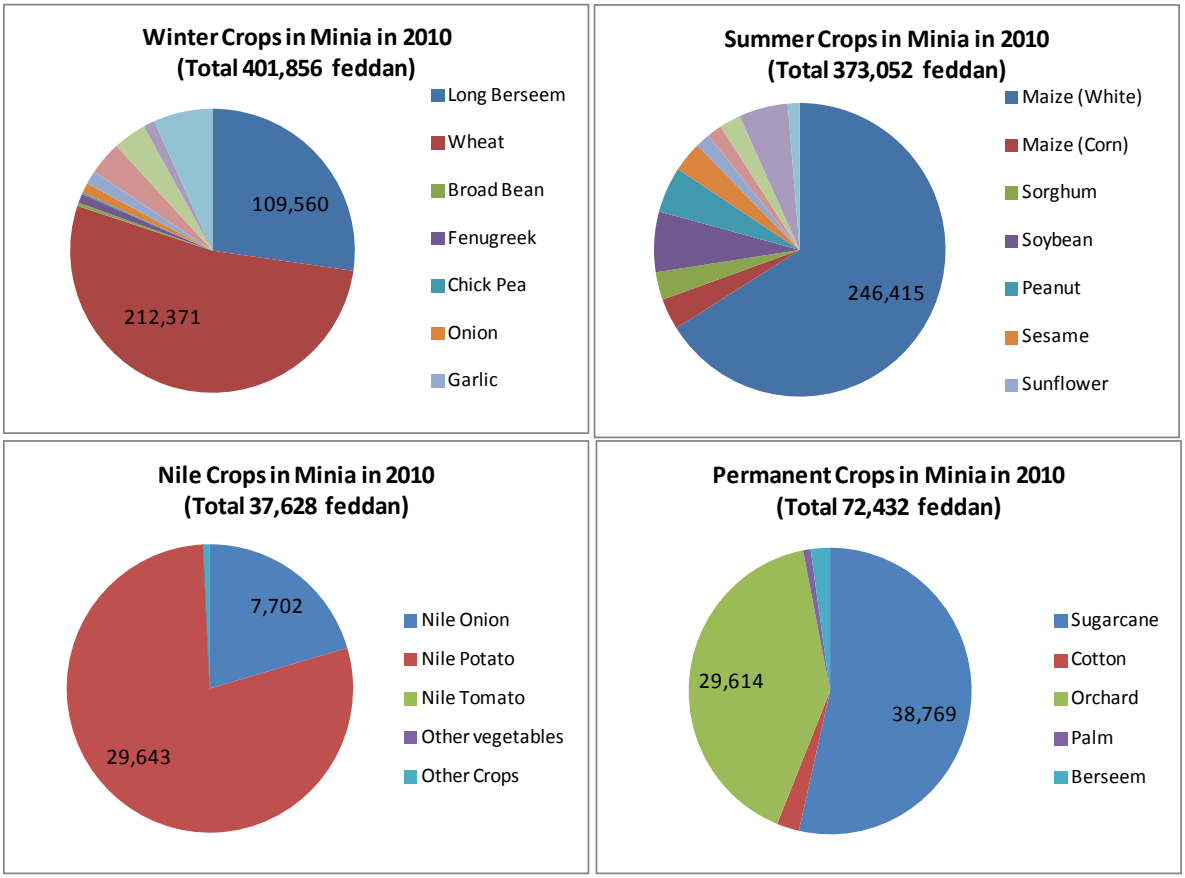
Table 1.3.1 Cropped Area and Cropping Intensity in Minia Governorate in 2010

Item	Old Land	New Land	Total
Farmland Area (fed)	422,792	49,979	472,771
Cultivated Area (fed)			
Winter crop	356,307	45,879	402,186
Summer crop	349,817	25,082	374,899
Nile crop	36,411	1,547	37,958
Permanent crop	66,485	4,100	70,585
Total	809,020	76,608	885,628
Cropping Intensity (%)			
Winter crop	84%	92%	85%
Summer crop	83%	50%	79%
Nile crop	9%	3%	8%
Permanent crop	16%	8%	15%
Total	191%	153%	187%

Source: MALR
Note: Permanent crop includes sugarcane and cotton according to the category of MALR.

1.3.2 Crop Production

General information of crop production can be overlooked in the statistic department of MALR. The following figure shows the share of cultivated area by crops by season during 2010. Wheat and berseem are dominant crops in winter season. These cultivated areas were 212,371 feddan and 109,560 feddan, respectively, and those two crops accounted for 80 % of the total cultivated area of winter crops. Regarding summer crops, Maize (white) is dominant, of which the cultivated area was 246,415 feddan. The share of Maize was 67 % of the total cropped area of summer crops. As for permanent crops, Sugarcane and fruit orchards are dominant. The areas used for these crops were 38,769 feddan and 29,614 feddan, respectively. The cropped area of cotton has decreased recently because of a downward trend in international value. During the autumn season, potatoes were dominantly produced in 29,643 feddan of farmland.



Source: MALR

Figure 1.3.1 Cropped Area in Minia Governorate in 2010

Recent crop production by district is informed by the Agricultural Department of Minia Governorate. Cropped areas of the main traditional and strategic crops are shown in the following table.

Table 1.3.2 Recent Cropped Area of Selected Crops in Minia Governorate

Crop	Season	Area (feddan)	Major Production District (Area in feddan)		
Wheat, winter	*2009/10*	192,831	El-Minia (32,595)	Samallout (30,365)	Beni Mazar (23,981)
Berseem, long season	*2009/10*	110,365	Beni Mazar (15,325)	Maghagha (15,188)	El-Minia (14,274)
Maize, summer	*2010*	296,800	Beni Mazar (44,599)	Samallout (40,944)	El-Minia (40,778)
Sorghum, summer	*2010*	4,269	Dayr Muas (2,726)	El-Edwa (894)	
Cotton, summer	*2010*	5,132	Beni Mazar (1,542)	Maghagha (1,001)	Matai (860)
Potato, summer	*2009/10*	3,174	Matai (1,591)	Samallout (453)	El-Minia (1,130)
Potato, winter	*2010*	6,472	El-Minia (6,472)		
Onion, winter	*2009/10*	2,463	Dayr Muas (774)	Maghagha (336)	Beni Mazar (296)
Garlic, winter	*2009/10*	10,883	Beni Mazar (3,661)	Samallout (1,823)	Maghagha (1,745)
Vegetables, winter	*2009/10*	14,659	El-Minia (4,047)	Dayr Muas (3,281)	Samallout (2,149)
Vegetables, summer	*2010*	23,808	El-Minia (4,856)	Dayr Muas (3,524)	Matai (2,759)
Gardens, fruits	*2010*	26,283	Samallout (12,936)	Matai (3,219)	Beni Mazar (2,731)
Sugarcane, long season	*2010*	38,104	Mallawe (20,269)	Dayr Muas (10,629)	Abo Korkus (5,947)
Sugar Beet, winter	*2009/10*	11,982	Abo Korkus (4,132)	Mallawe (3,050)	Beni Mazar (1,224)
Marjoram, long season	*2010*	1,035	Maghagha (491)	Beni Mazar (491)	
Medical plants, winter	*2009/10*	5,779	Mallawe (2,121)	Beni Mazar (1,310)	Dayr Muas (721)

Source: Minia Agricultural Directorate (Rotation Sector)

1.3.3 Distribution of Strategic Crops

There are specific areas producing strategic crops, which are non-traditional horticulture crops to bring cash income to farmers, as shown in the following figure.

- Onion and garlic: Main production areas are the northern and southern districts.
- Grapes: Main production area is in the northern districts
- Potatoes: El-Minia district is the dominant production area.
- Sugarcane and sugar beet: Main production area is southern districts.
- Vegetables: All districts produce vegetables. The dominant vegetable is the tomato.
- Medical and aromatic plants: All districts produce medical and aromatic plants. The dominant plant is coriander.

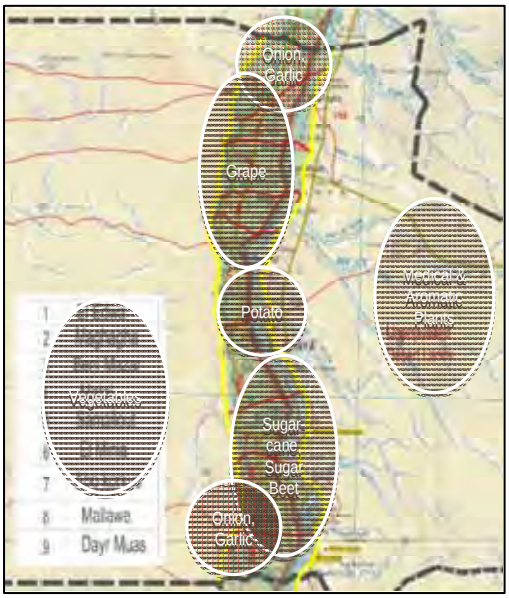


Figure 1.3.2 Distribution of Strategic Crops in Minia

1.3.4 Agriculture by Zone

In the discussion among the study team and officers of the district agriculture directorates, 9 districts in Minia Governorate were categorized into three zones in this Project. The features in agriculture of these zones are as follows.

Zone	Feature of Agriculture
Northern Districts	• This zone includes three districts, El-Edwa, Maghagha, and Beni Mazar. • Production of onion and garlic is relatively high in this zone. There is an onion export company in the Maghagha district. • Marjoram and other medical and aromatic plants are planted in this zone.
Central Districts	• This zone includes three districts, Matai, Samallout, and El-Minia. • Grape yards are prevalent in both the Samallout and Matai districts. Some growers produce export-quality grape by using support. • Vegetables are produced by common farmers in this zone. Fruit-type vegetables are common but leaf-type vegetables are not. There are some greenhouses producing seedlings of vegetables, and tunnels for winter vegetables. • El-Minia district is famous for potato production in the country.
Southern Districts	• This zone includes three districts, Abo Korkus, Mallawe, and Dayr Muas. • As there is a state-owned sugar factory in the Abo Korkus district. Sugarcane and sugar beet are produced in this zone. As the irrigation water requirement of sugar beet is much lower4, the government recommends planting it as a sugar crop instead of sugarcane. • In the Dayr Muas district, various kinds of vegetables are widely produced.

[4] Irrigation water requirement of Sugarcane and Sugar Beet is 8,189 CUM/feddan and 4,076 CUM/feddan, respectively. (JICA, 1999)

1.3.5 Cropping Calendar

The cropping season is generally divided into three categories, winter crop, summer crop, and Nile (autumn) crop. Cropping seasons of major crops are given in the following chart.

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wheat												
Beans												
Berseem												
Onion												
Garlic												
Sugar Beet												
Vegetables												
Herbs												
Cotton												
Soybean												
Maize												
Peanut												
Sesame												
Sunflower												
Sugarcane												

Source: Minia Agricultural Directorate

Figure 1.3.3 Standard Cropping Calendar in Minia

1.3.6 Crop Budget

The standard crop budget of major winter and summer crops in the Minia governorate is shown in the following chart. The net income from wheat, berseem and maize is LE 1,634, LE 1,759 and LE 277 per feddan, respectively (land rent is included in the production cost). Garlic, which is expected to earn LE 6,624 per feddan, is the most profitable vegetable. Net income from tomatoes, the most common vegetable, is estimated as high as LE 6,240 in winter and LE 7,285 in summer. Net income of medical and aromatic plants varies widely by crop, for example LE 8,179 for marjoram, LE 2,979 for coriander and LE 1,165 for fennel.

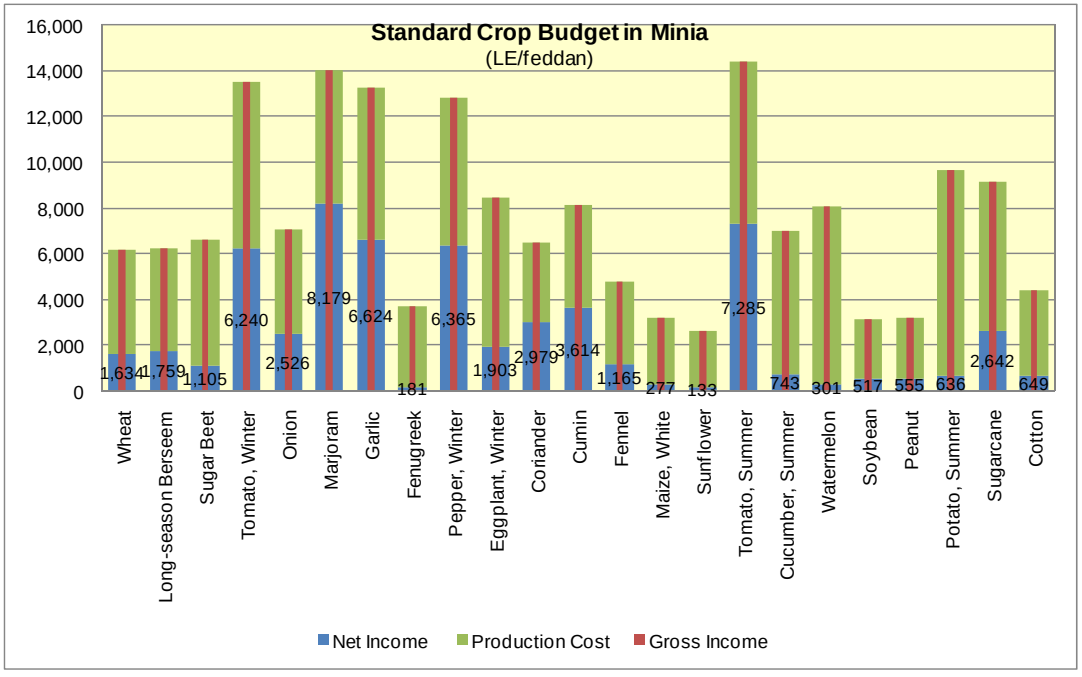


Figure 1.3.4 Summary of Crop Budget in Minia in 2009

Source: Minia Agricultural Department (Production cost includes land rent)

1.4 Farm Economy and Gender in Farming

Farm economy survey was carried out for 131 households from 6 villages selected (3 usual villages and 3 potential villages according to the classification made at the selection) in this Project. This section describes the farm economy based on the results of the survey.

1.4.1 Farm Economy

(1) Scale of Land Holdings

Small scale farmers, whose farmland is less than 3 feddan, account for about 90% of the whole farm household in the Minia governorate. Farm households with less than 1 feddan account for 70% of the entire faming household in the Minia governorate. A survey of the socio-economic distribution of farm scale in 6 villages is shown in Table 1.4.1. The pattern of distribution of farm scale in six villages is almost the same as the overall total in the Minia governorate. In the village of Delga, where sugar cane, onions, and other vegetables are cultivated, the small scale farmers account for about 70% of the village, but share of farmers with more than 3 feddan, is higher than the other five villages.

Table 1.4.1 Distribution of farmland in the target villages of the Rural Economy Survey in Minia

District	Village Name	0-1 fed	1-3 fed	3-5 fed	5-10 fed	10 fed <	Total (%)
Maghagha	Abad Sharona	72.2	20.3	3.8	2.9	0.9	100
Matai	Abo Haseeba	77.1	18.7	1.8	1.8	0.5	100
Mallawe	El Baragel	80.1	15.8	1.9	1.7	0.4	100
El-Edwa	Salakos	67.7	25.0	4.7	1.8	0.9	100
El-Minia	El Borgaya	72.5	18.4	3.2	4.2	1.7	100
Dayr Muas	Delga	33.1	37.6	13.5	10.8	5.0	100

Source: Village Cooperative Land Registration Data

(2) Cultivated Crops in Six Villages

Traditional crops, such as wheat, berseem, and maize, are major crops in six villages. In addition, some profitable crops are also cultivated in six villages. Abad Sharona, Salakos, and El Borgaya are located in the special areas producing marjoram, garlic, and potato, respectively.

The respondents in the six villages cultivate about 25 kinds of cereals, vegetables, ornaments, and fruits. Those crops are categorized into three types of crops, such as traditional crops, consisting of wheat, maize, beans, other cereals and fodders, seasonal profitable crops consisting of potatoes, garlic, tomatoes, basil, other vegetables and other annual ornaments, and perennial profitable crops consisting of pomegranates, sugarcane, marjoram, other fruits and perennial ornaments. Their cropping patterns are composed of those three types of crops, such as traditional, seasonal profitable, and perennial profitable crops. Table 1.4.2 shows the distribution of cropping pattern in 6 villages, composed by 3 types of crops.

Table 1.4.2 Distribution of Types of Cropping Pattern

	No. of respondents	T++	T+A	T+P	T+A+P	A+P	A++	P++
Abad Sharona	20	10	1	7	0	0	0	2
Abu Husseiba	16	12	3	1	0	0	0	0
Bargeel	27	4	1	6	2	0	0	14
Salakos	21	18	3	0	0	0	0	0
El Borgaya	21	1	17	0	2	0	1	0
Delga	26	10	10	2	4	0	0	0
Total	**131**	**55**	**35**	**16**	**8**	**0**	**1**	**16**

(Unit: Number of respondents)

T++: Only traditional crops
T+A: Traditional crops and seasonal profitable crops
T+P: Traditional crops and perennial profitable crops
T+A+P: Traditional crops and seasonal and perennial profitable crops
A+P: Seasonal and perennial profitable crops
A++: Only seasonal profitable crops
P++: Only perennial profitable crops
Source: JICA Study Team

As is obvious from the above table, respondents' cropping patterns in 6 villages are represented by the following 4 patterns:

- Pattern A: Only traditional crops
- Pattern B: Traditional crops and seasonal profitable crops
- Pattern C: Traditional crops and perennial profitable crops
- Pattern D: Only perennial profitable crops

Pattern A, composed by only traditional crops, accounts for 42% of all respondents.

Table 1.4.3 shows typical cropping patterns and their annual net incomes for one feddan. Pattern B is divided into Pattern B-1, composed of wheat, winter crops, and maize, and Pattern B-2, composed of wheat, maize, and potatoes in the Nile season. In the case of the socio-economic survey, seasonal profitable crops in winter and Nile season are represented by garlic in Salakos village and potatoes in the El Borgaya village, respectively. Perennial profitable crops are represented by marjoram in Abad Sharona and sugarcane in El Baragel villages. Those seasonal and perennial profitable crops generate higher net incomes than that of traditional crops.

Table 1.4.3 Typical Cropping Patterns and Their Net Incomes for 1Feddan

Pattern		Net Income	Winter Crop			Summer Crop			Nile Crop		
		(LE/year)	Crop	Area (fed)	Profit (LE)	Crop	Area (fed)	Profit (LE)	Crop	Area (fed)	Profit (LE)
A	Traditional crops	6,600	wheat	0.5	2,000	maize	1.0	2,600			
		(2,600)	berseem	0.5	2,000						
B-1	Traditional + Winter profitable crops	9,000	wheat	0.5	2,000	maize	1.0	2,600			
		(5,500)	garlic	0.5	4,400						
B-2	Traditional + Summer or Nile profitable crops	9,000	wheat	1.0	4,000	maize	1.0	2,600	potato	1.0	2,400
		(5,000)									
C	Traditional + Perennial crops	9,400	wheat	0.5	2,000	maize	0.5	1,300			
		(5,400)	marjoram	0.5	6,100	(perennial)					
D	Perennial crops	6,000	sugar cane	1.0	6,000	(perennial)					
		(2,000)									

Source of cost and income: Minia Agriculrural Directorate
( ): Net income - rent. Rent = LE4,000/year (surveyed by the Study Team)

(3) Annual net incomes per Cultivated Area

The distribution of respondents' agricultural net incomes by cultivated area is shown in the Figure 1.4.1. The following figure shows that the range of respondents' profits at the same area of farmland

is as wide as from thousands to tens of thousands. This means that farmers have the possibility of generating higher profits by producing profitable crops and making other improvements.

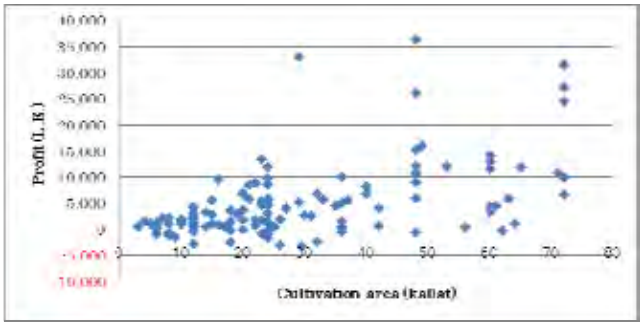


Figure 1.4.1 Distribution of Samples by Income and Cultivated Area

(4) Animals in household

About 80% of 130 respondents in the socio-economic survey breed large animals, such as buffalos and cows, as supplemental income. About 60% of respondents also have donkeys. In addition, about a half of respondents not breeding large animals have a preference having large animals for increasing their income. On the contrary, in case of respondents owning less than 0.5 feddan, the share of respondents who want to have large animals is as small as 30 %. Fodder crops should be involved in the proposed cropping pattern in the development plan, in order to supply feed for animals.

(5) Agricultural tools, machines and equipments

About 40 % of respondents owns irrigation pump. In case of respondents owning less than 1 feddan, however, the share of farmers owning irrigation pump was as few as 20%. Regarding tractors, almost all of respondents, except for some respondents with more than 2 feddan, did not have them. Regarding harvester, sprinkler for irrigation, and sprayer, few respondents own them.

(6) Off-farm Income

About 50% of respondents' income came from off-farm jobs. In addition, about 90 % of respondents got less than LE 1,000 from off-farm jobs annually. According to the socio-economic survey, no respondents got remittance from their family members. In order to increase farmers' income, increasing agricultural income is indispensable, because farmers have the possibility to increase their income by selecting profitable crops and making other improvements as mentioned above.

1.4.2 Gender in Farming

In the socio-economic survey, about 130 small scale farmers and their wives were interviewed on (1) women's role in farming, (2) means to increase their incomes, (3) issues in their farming.

(1) Women's roles in farming

Women's roles in farming operation, such as land preparation, seeding, irrigation, weeding, spraying, harvesting, and transportation of products were examined in the six villages. Both respondents of men and women answered that women's role in farming is limited, because farming operations are usually carried out outside of their residence. The consensus among the respondents was that women should avoid work with health risks, such as spraying pesticide and insecticide, and heavy duty jobs, such as transportation. However, several farmers with less than 1 feddan answered that women's contribution, especially on land preparation and harvesting requiring much labor, is important.

(2) Women's roles in Decision Making on Farming

The women's roles on decision making in farming, such as selection of cultivating crops, purchasing agricultural inputs, purchasing agricultural tools and machines, and negotiating price with traders, were examined. Both male and female respondents considered women's role in decision making on

farming is not very influential. However, the amount of responses answering "very important" is higher than the case of farming operation. The women's role on the decision making on selection of cultivating crops was especially considered as "very important".

(3) Means of Income Generation

Both male and female respondents answered that keeping livestock was the most preferable means of income generation. Figure 1.4.2 shows share of answers about preferable means of income generation. The share of female respondents who chose household animal was higher than male respondents. Breeding livestock is generally considered as women's role. The socio-economic survey confirmed the role of women in breeding household animal is very important.

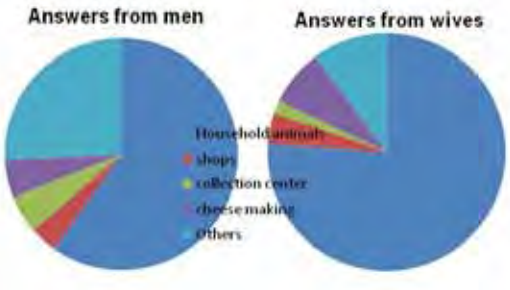


Figure 1.4.2 Share of Answers on Preferable Means of Income Generation

(4) Issues on Farming

The highest three prioritized issues on farming are shown in Table 1.4.4. Men's and women's priority for issues on farming is almost same. It is presumed that issues on farming were well shared and discussed between husband and wife.

Table 1.4.4 Difference of Awareness on Issues on Farming between Men and Women

		Respondents of men		Respondents of women
Highest prioritized issues	Max ↑	High costs of agricultural inputs	Max ↑	High costs of agricultural inputs
		Low price of crops		Low price of crops
		Hard labor of agricultural works		Lack of Irrigation water

1.5 Distribution Structure of Agricultural Produce

1.5.1 Distribution Structure for Focused Crops

General distribution system of the crops in the governorate has been described in the Chapter 3 in Part I. The study focused on garlic, potato and onion cultivation in the Minia Governorate. This describes the distribution system of these focused crops in the Minia Governorate.

(1) Garlic

Garlic is a one season winter crop, harvested from late March to April. There are few store houses or processing facilities with less capacity located in the study area. Therefore, selling and buying prices fluctuate between the in season and off-season. Some amount of crop is thrown away in the field because of the low selling price. One processing company in northern Minia has stopped its processing because of the high price in off-season and less capability to stable supply to meet the demand. There are too many and multiplied traders participate in the area. On the other hand, garlic is also exported (immature ones for Europe and mature ones for Arab countries). The following is the present distribution flow of garlic in the area.

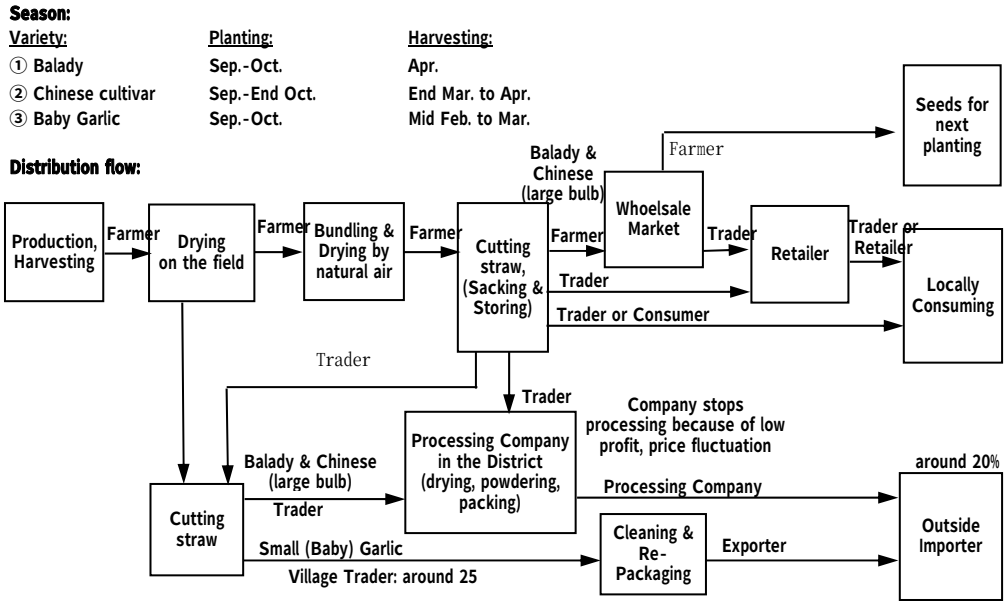


Figure 1.5.1 Distribution Flow of Garlic

(2) Potato

Potatoes are one of the specialty crops in the area, especially in central Minia. There are many varieties in the area and harvested in two or three seasons. But the highest season is from November to January and others are for seed production. Therefore, at the beginning of November, the price is very high, while in December, price suddenly decreases by a third. There is cold storage for seeds and products. Cold storages for products do not have enough capacity in the area. There are strong and multiplied traders in the area. Almost all products are dealt with by these traders. There are no food processing factories in the area. The following is a present distribution flow of potatoes in the area.

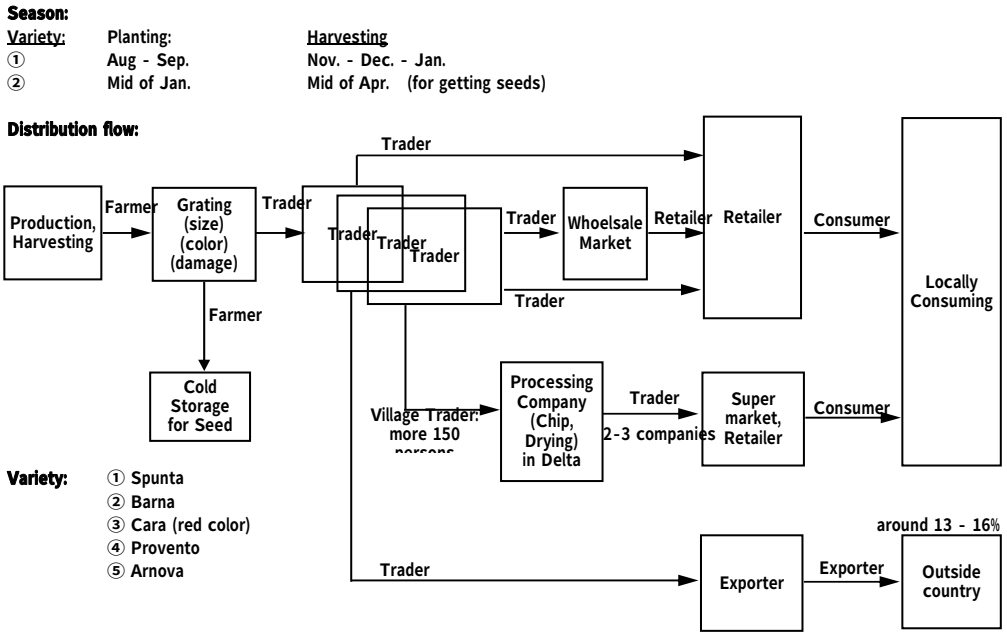


Figure 1.5.2 Distribution Flow of Potato

(3) Onion

Onion is popularly planted in the area, especially in southern Minia in two seasons. In season, there is heavy onion cultivation in the area, but there are few storing methods, such as keeping in cool natural air. As technology is limited in the area, there are many losses in storing and handling. On the other hand, there is much onion cultivation for export and the trend is consistently at around 200,000-300,000 ton a year as the home consumption trend is grown rapidly. Exporters in the area are few, but the local traders are many and multiplied. There are many pickle factories in the area and home processing facilities for pickles are on the rise, producing products for consumption within the village system. The following is a present distribution flow of onion in the area.

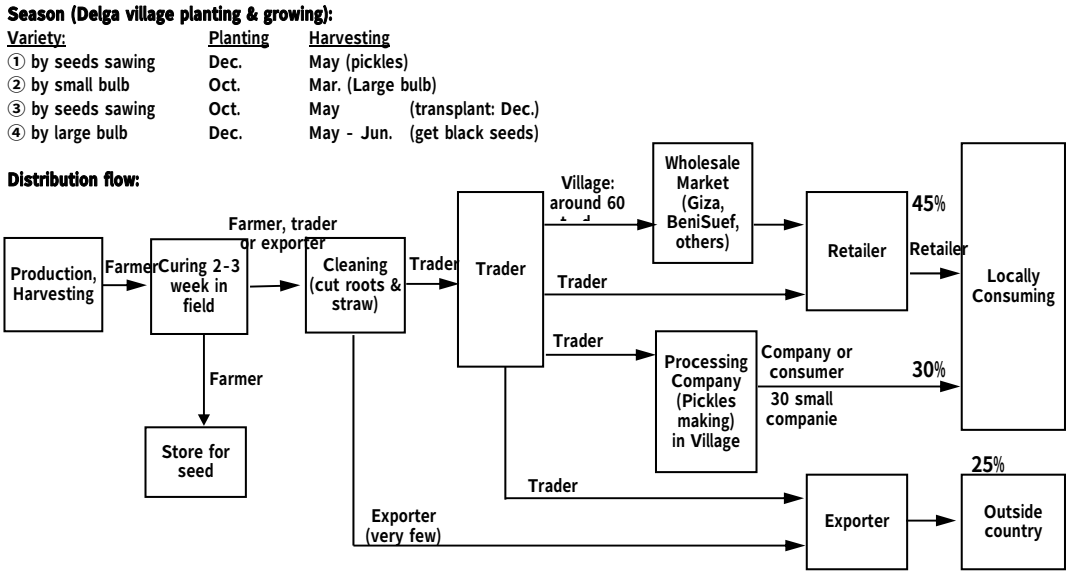


Figure 1.5.3 Distribution Flow of Onion

1.5.2 Markets in Minia

There is no wholesale market, in the sense of a market for wholesale traders. There are wholesale traders but they work independently. Some have set locations, and others do not. There is no establishment or location where wholesale trading is organized, supported and monitored. In Minia City, there is a market called El Habashi Market, but it is not organized as a wholesale market and retailers and traders interact freely.

Research has revealed a record of a joint IFAD and Ministry of Agriculture project carried out in 2009 “Agricultural Production Intensification Project in El Minia”. The table below shows an inventory of markets in El Minia governorate as documented by the project:

Table1.5.1 Markets in Minia

	District	Wholesale Market		Weekly Market (retailer)			Private Market		Market		Total
		Wholesale	Retailer	once/w	twice/w	daily	Street	Private	Vegetable	Fruit	
1	El Edwa	2	4	1	0	1	3	2	2	2	**17**
2	Maghagha	3	6	1	1	2	6	3	3	3	**28**
3	Beni-Mazar	4	9	1	1	2	7	4	5	7	**40**
4	Matay	2	5	1	1	2	3	2	3	3	**22**
5	Samalout	5	8	1	1	2	7	5	6	6	**41**
6	Minia, Urban	7	10	1	2	3	9	7	10	10	**59**
6	Minia, Local	4	6	1	2	2	5	4	5	5	**34**
7	Abo-Korkas	3	7	1	1	2	6	3	3	3	**29**
8	Mallawi, Urban	4	5	1	2	2	4	4	4	4	**30**
8	Mallawi, Local	4	9	1	1	2	8	4	5	5	**39**
9	Dermawas	2	4	1	1	1	3	2	2	2	**18**
	Total	**40**	**73**	**11**	**13**	**21**	**61**	**40**	**48**	**50**	**357**

Source: Minia Governorate, Agriculture Directorate,
Agricultural Production Intensification Project by IFAD

It should be clarified that what is referred to as wholesale market in the table is a shop known as a '*shona*' or a '*wekala*'. These are privately operated shops with some storage space and interact more frequently with intermediate traders than with wholesale traders. The operators of these shops buy mainly fruits and vegetables and some dry vegetables as well and distribute to retailers. They operate on a commission basis and usually give one day to two day credit facility for retailers.

They are unlike the wholesale traders who deal directly with the producers and finance some of the crops. They are referred to as wholesale in the sense that retailers take a number of baskets from them as opposed to consumer purchases by kilograms. Most of these shops are registered and pay the local units for cleaning services and use of area for product display outside the shops. The numbers in the table above are not necessarily an inventory of all such operating shops, but include only those which are documented and registered.

Because of the lack of organization, there are no official records of transactions at the wholesale market. According to interviews with some of the traders and wholesalers gathering at the El Habashi market, the trend of the prices of the agricultural produce has been approximated.

Table 1.5.2 Wholesale and Retail Market Prices in El-Habashi, Minia

Crop	Production Area	Highest Price /kg		Lowest Price / kg		Remarks
		Month	Price (LE)	Month	Price (LE)	
Grape (white)	El-Minia	Dec	3.50	Feb	0. 60	Shipping for three months, kafas=17kg
Potato	El-Minia, Alex	Aug	2.00	Oct	1.50	Year-round shipping, one portion= 50kg
Potato, Potato seeds	El-Minia	Aug	2.00	Jan	0.80	Shipping for planting, one portion=50kg
Green Pepper	El-Minia	Aug	2.50	May	1.50	Year-round shipping, one portion= 40kg
Tomato	El-Minia	Jul	2.50	Feb	0.50	Year-round shipping, 1kafas=22kg
Eggplant (3 varieties)	El-Minia	Dec	1.50	Jul-Aug	0.50	Year-round shipping, one portion= 40kg
Onion (for small pickle)	El-Minia, Assiut, Beniswef	Sep	2.00	Jan	0.90	Year-round shipping, one portion= 50kg
Cabbage	El-Minia	Aug	3.50/ piece	Jan	1.00/ Piece	Year-round shipping, Dealing with farmers by 100 pieces
Garlic (local, china)	El-Minia, Beniswef	Aug	10.00	Feb	3.00	Year-round shipping, one portion = 50kg

The Study Team, August 2010

1.5.3 Post-harvest and Processing Facilities

At present the post-harvest and processing facilities are operated by the private sector for agricultural products such as onion, garlic, potatoes, sesame, etc. and the ones operated by farmer organization are hardly seen.

In Tayeba village in Samallout district, there is a private macaroni company (with around 40 labors) and Halava company (with around 80 labors with two shift works). In Delga village in the Dayr Muas district, a small scale pickle factory (having 20-30 labors) is stationed. The activities of the companies are for the processing of agricultural products and value addition to them. It is one of the marketing improvements. These companies utilize simple methods with many laborers, so it is welcome in these districts, with a great deal of small scale and landless farmers. When these facilities are first introduced, there are many constraints and problems to be solved, such as land acquisition, the large investment cost, technology transfer for operation and maintenance, acquisition of persons with suitable experience, and improvement of quality control and its regulations.

In Borgaya village in El Minia district, there are 2,664 feddan farm land in whole village, and 2,100 feddan are used for potato planting. Some of the products are stored in cold storages for 3-4 months to obtain higher selling prices as well as reduce the decay and the handling losses. This increases the farmers' income. This method for lowering the price peak and obtaining a good balance between the supply and demand is one of the market improvements. There is potential for development in these areas.

In Baragel village in the Mallawe district and neighboring village, Abo Kolta, molasses production is popular. In Baragel village, there are two companies (there were three but one recently closed) established in the 1930s, contributing to the reduction of unemployment. Two companies improved the operation system for fuel source by shifting from oil fuel to the squeezed residues fuel from sugarcane. One of them is very old and requires improvement, but struggles for lack of funding. The other has already been improved by owner's investments and his own technology. They sell them to the traders in Cairo and the trade contracts eliminate problems. However, these factories need to improve hygienic standards, because the equipment is installed in the open air.

There are many small scale flour mills in the villages that contribute to home consumption of farmers. In the El Edawa district, garlic production is as popular as in the Maghagha district. In Salakos village, there are garlic drying and packing facilities. In Beni Mazar district, grape planting is also popular. There is a private grape packing factory for export in Saft Abo Gerg village. In the Abo Kokus district, sugarcane and beet planting is popular. There is a large sugar factory operated by the government in Abo Korkus village. Recently, beet production has increased instead of sugarcane due to government promotions.

1.6 Farmers' Organizations

1.6.1 Agricultural Cooperatives

(1) Administrative Organization

The General Directorate of the Agricultural Cooperation consists of five departments: 1) the Administration of Organization and Orientation, 2) the Financial Follow Up and Cooperative Accounting, 3) the Administration of Projects, 4) the Administration of Marketing, and 5) the Engineering Administration. Roles of these departments are as follows:

Table 1.6.1 Organization and Responsibilities of the General Directorate of the Agricultural Cooperation

Department	Responsibility
Administration of Organization and Orientation	Specification of directors of the agricultural cooperatives, Supervision on specialized cooperation, Building and maintaining storages, Preparation of the monthly and annual reports on the activities of the cooperatives, Transgression on farmlands, Collection of data for the information center and others, Elimination of illiteracy; giving loans to clubs for listening and watching, Training new members of the Board of Directors for the cooperatives
Financial Follow-up and Cooperative Accounting	Financial and cooperative follow up of the local, specialized and combined cooperatives and administration of cooperation in the districts, Preparing the budgets related to the cooperatives and revising them, Collecting the payment foe involvement in the cooperation newspapers and the agricultural magazine from the local cooperatives to send them to the central administration of agricultural cooperative, Coordinating worker's affairs related to cooperatives, Improving local cooperatives, Saving production requirements such as seeds and other inputs
Administration of Projects	Following up on the projects for agricultural cooperatives.
Administration of Marketing	Marketing of field crops such as wheat, cotton and maize, Requirement for animal production and fields (fodder), Marketing of vegetables and fruits (onion and garlic), Statistical data related to cooperatives
Engineering Administration	Following up the projects of mechanization (tractor, digger, resistance machines), Making auctions for selling machines which are not needed, Supervision of administration of cooperatives in the districts from the technical approach

(2) Agricultural Cooperatives

In Minia Governorate, there is a central multi-purpose agricultural cooperative. Under this central cooperative, there is a combined multi-purpose agricultural cooperative in each District (total nine Districts). Within the district, there are villages, each of which has a local multi-purpose agricultural cooperative. This local cooperative at the village level is organizing farmer groups in the village. In terms of specialized cooperative, nine cooperatives are organized in Minia Governorate, namely 1) Vegetable & Fruit cooperative, 2) Onion & Garlic cooperative, 3) Potato cooperative, 4) Honey bee cooperative, 5) Black syrup (molasses from sugarcane) cooperative, 6) Sugar product cooperative (sugarcane & beet), 7) Livestock cooperative, 8) Poultry cooperative, and 9) Field crop cooperative (wheat & maize). Table 1.6.1 shows the number of multi-purpose agricultural cooperatives and specialized cooperatives in Minia Governorate.

In Matai district, there are two special cooperatives. One of them is the Onion and Garlic Cooperative, which was established in 1982 with 62 associations in the district and12 staff including the governmental staff for director and accountant. The other is the Vegetables, Fruits and Aromatic Plants Cooperative, which was established in 1983, with 88 associations in the district and12 staff with governmental staff for director, accountant and secretary. However, neither cooperative has conducted the distribution or trade activities. They have only supported the farmer for planting technology and input supply such as fertilizer and seeds, as well as sales of agricultural machines. This is expected to improve the cooperative organization and its activities, and for re-evaluation.

Table 1.6.2 Number of Agricultural Cooperatives in Minia

No.	District	Agriculture cooperative				Specified Agriculture Cooperatives										
		Local	Common	Central	Sub total	Vegetable & fruit Coop.	Onion & Garlic Coop.	Potato Coop.	Honey bee Coop.	Black syrup	Sugar product	Livestock	Poultry	Field crop	Sub total	Total
1	El Edwa	24	1	0	25	0	0	0	0	0	0	0	0	0	0	25
2	Maghagha	39	1	0	40	0	0	0	0	0	0	0	0	0	0	40
3	Beni Mazar	41	1	0	42	0	0	0	0	0	0	0	0	0	0	42
4	Matai	26	1	0	27	1	1	0	0	0	0	0	0	0	2	29
5	Samalout	48	1	0	49	0	0	0	0	0	0	1	0	0	1	50
6	El Minia	42	1		43	0	0	1	1	0	0	0	1	1	4	47
7	Abo Korkas	46	1	0	47	0	0	0	0	0	1	0	0	0	1	48
8	Mallawi	49	1	0	50	0	0	0	0	0	0	0	0	0	0	50
9	Dayr Muas	27	1	0	28	0	0	0	0	1	0	0	0	0	1	29
10	At Governorate level	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
	Total	342	9	1	352	1	1	1	1	1	1	1	1	1	9	361

Source: Minia Governorate, Agriculture Directorate

(3) Local Multi-Purpose Agricultural Cooperatives

The local agricultural cooperatives vary in size of area served and staff numbers and almost all of them interviewed carry out the same roles and services. All of the cooperatives have two activities in which they are engaged in- providing agricultural inputs, and extending services for agricultural technologies. The only role that the cooperative has in lending farmers is that it provides proof of ownership for the farmers to lend against their land as collateral. The cooperative is the record keeper of land ownership and ownership transitions. The cooperative generates income primarily from the services commission which is an annual fee of LE 2 per feddan, collected when each farmer receives their quota of pesticides. Cooperatives are implemented for leasing, animal husbandry, and poultry investments to generate greater revenue.

1.6.2 Present Situation of other Organizations

Beside agricultural cooperatives and BDAC, there are no farmer's associations in the villages for agricultural products except for the ones organized by donors. In terms of social welfare, Community Development Associations, Islamic Societies, El-Forsam Society, Friend Society and Love Society, etc. provides the following services to support small scale-farmers.

Table 1.6.3 Activities of Other Organizations

Organization	Activities
Community Development Associations (CDA)	-Loan of poultry, livestock and apirary
	-Education of rural women
	-Providing nursery for rural women
	-Medical advice
	-Developing an awareness of how qualified milk, cheese and butter can be produced by farmers.
Islamic Societies	-Koran memorizing, charity for helping poor people
El-Forsam Society	-Providing loan
Friend Society	-Improving sanitation, medical care and agricultural service
Love Society	-Creating friendship between Muslims and Christians

Source: JICA Study Team

1.7 Agricultural Extension Services

There are seven extension centers within the governorate in El-Edwa, Maghagha, Beni Mazar, Matai, Samalout, El-Minia, and Abo Korkus Districts. These centers are carrying out training for extension workers and holding workshops for farmers with videos and overhead projectors. They use the research centers to analyze problems presented by farmers and to develop countermeasures. The continuous linkage between extension centers and the Development Support Communication Center in Mallawe is maintained by providing training courses and hosting seasonal meetings for the officers

working at the administration of agricultural extension services in governorate, district and village level. Recently the workshop on restricting child labor in agriculture has been held in cooperation with the Ministry of Family and Inhabitants.

The training covers all agricultural technologies, livestock breeding and also promotes adult literacy, rural media and restriction of children's engagement in agriculture works. Demonstration farms for all planted crops are provided in all districts of the governorate and are used to instruct farmers in how to apply modern techniques for each crop.

1.8 Agricultural Finance

1.8.1 Agricultural Financial Services by Banks

There are two main banks providing agricultural financial services in Minia; PBDAC (Principle Bank for Development and Agricultural Credit) and National Bank of Egypt. The PBDAC is a main credit provider for small scale farmers. Their branches at the village level called BDACs deal with farmers directly. The PBDAC has 119 branches and 1,103 BDACs covering the whole of Egypt. In Minia, they have nine branches and 103 BDACs.

The PBDAC was developed from financial services of agricultural cooperatives in the late 1950s to 1970s. In 1957, Agricultural Credit and Cooperative Bank, which was the main credit provider at the time, was admitted to borrow the fund from the Central Bank; as a result, agricultural finance expanded throughout Egypt. This Agricultural Credit and Cooperative Bank developed into the PBDAC, and a large number of village banks were established in 1957. The PBDAC has started to provide intensive agricultural finance services in Egypt (Saddik, I. 1995).

The PBDAC provides two types of loans. One of the main loan services is agricultural crop loan which is supported by governmental subsidies. The government pays6 % of this loan interest as a subsidiary, and the bank charges farmers 5% interest. In most cases, farmers take loans for their major crops such as maize and wheat. If farmers borrow the money from the bank every season, they have to pay 10%interest each year. Loans are provided to land holders. Farmers need at least six karat (one feddan is one twenty-forth) in order to receive a loan from the PBDAC. Loan target seems to include tenant farmers with long term contracts. Also, landless farmers will be able to attain loan services, if they have a co-signer who has his own land. The maximum loan amount is different from land size and cultivating crops. According to the PBDAC, most farmers borrow 2,000 LE for maize and wheat each per feddan, and around 7,000 LE for sugarcane and fruits.

In addition to agricultural crop loans, the PBDAC provides investment loans which include livestock, poultry, cold storage, irrigation facilities, and agricultural machines. Loan periods are divided into three types; short term (12 months to 14 months), medium term (15 months to 36 months), and long term (3 years to 5 years). These terms depend on the purpose of loans and the interest rate ranges from 11% to 13%. According to the PBDAC in Cairo, borrowers are available for taking loans worth one-third of their holding land. Regarding the condition of loans, land holding is necessary; besides, some borrowers need to submit income verification and guarantees.

Not only the PBDAC, but also the National Bank of Egypt provides loans to farmers. Borrowers are not required to hold land, but they need guarantees from governmental officials. This means that getting access to loans is not easy for small scale farmers and also their interest rate is about 16%, higher than that of PBDAC.

1.8.2 Community Associations as Credit Providers

Community associations also provide loans at the village level. There are community associations in most villages; community associations called Community Developed Associations are well known associations for supporting marginalized people, such as widows, at the village level. Most of them provide small loan for livestock and poultry activities, though specific activities vary from village to village. In addition to Community Development Associations, there are Islamic Society associations in some villages and they engage in activities for supporting Muslims.

1.8.3 The Social Fund for Development

SFD (Social Fund for Development) plays one of the major roles in the financial sector in Egypt. It was established in 1991 as a safety net for structural adjustment program. They have since developed from a simple safety net to a broader role encompassing various financial activities. Today, they provide financial assistance to banks, non-governmental organizations, and other associations. They also operate various programs such as encouraging small-medium enterprises and creating job opportunities. According to the SFD in Minia, there are two credit units; Micro Project Unit and Small Project Unit. The difference between these two units is the available loan amount. The maximum amount of the micro project is 1 million LE, while 2 million LE is the maximum for small project unit. The interest rate for loans ranges from 10% to 16%. The loan period is two years and repayment period is five years. Farmers' associations apply for the loans with proposals, and then the SFD committee is re selects which applications to accept. This process takes three to five months.

1.8.4 Access to Loan through Projects

There is another way to access loans without dealing with banks and community associations, rather by dealing with projects that provide loans to farmers. For example, SFD manages the project called "Comprehensive Agricultural Development Project". The purpose of this project is to provide loans for training in irrigation, fertilizers, and seeds, expanding on-going projects, creating new projects, vegetable and fruit collective marketing, and encouraging green house cultivation. This project provided five million pounds to 95 customers during 2007 to 2009. There are 52 agricultural projects (3.6 million pound), 43 livestock projects (1.4 million pounds).

Table 1.8.1 Activities of Comprehensive Agricultural Development Project (2009)

Activities	Number of Customers	Credit Amount	% of total activities
Irrigation	1	100,000	2.0%
Small Track	36	2,329,725	46.6%
Pesticides & Seeds trading	1	100,000	2.0%
Collecting Fruit & Vegetables	1	50,000	1.0%
Refrigerator for Vegetables	1	200,000	4.0%
Tractor	4	250,500	5.0%
Big Track	4	355,250	7.1%
Packing for Foods	2	100,000	2.0%
Breeding Female Cattle	43	1,439,525	28.8%
Green Houses	2	75,000	1.5%
Total	95	5,000,000	100%

There is also the "Agricultural Research and Development Fund" funded by the European Union. This fund is for individual farmers and farmers' associations to create job opportunities and improve productivity and livelihood. The loans are provided through 12 affiliated banks. In Minia, four (Cairo Bank, Alexandria Bank, National Bank of Egypt, and the PBDAC) of the 12 banks are

available. The loans are provided for a wide range of activities such as livestock, nurseries, horticulture, and fisheries.

The maximum loan amount is 500,000 LE for individuals and five million LE for farmers' organizations and corporations. There are three types of loans; short term (12 months) with a 7.5% interest rate, medium term (1 to 3 years) with an 8.5% interest rate, and long term (3 to 5 years) with a 9.5% interest rate.

According to farmers and village cooperatives, most small scale farmers take loans from the BDAC for their crops. In particular, the loans are used for wheat and maize because their prices are relatively stable. Farmers usually take 2,000 to 2,500 LE per feddan. This means that most farmers borrow around 2,000 LE for both winter crops and summer crops. Of course, some wealthy farmers who have extra income sources do not need to borrow money from the bank.

The bank announces the interest rate of agricultural loan at 5.5% (5% interest rate plus 0.5% administration cost). On the other hand, there are some farmers who do not know about how much money they pay for interest. This is one of the reasons this situation seems to be a complicated loan system. For example, farmers have to pay the cost of filing and balance sheets on the top of the interest and administration cost. When farmers defer payment, the bank will charge extra; therefore, it is difficult for farmers to understand the exact amount of interest.

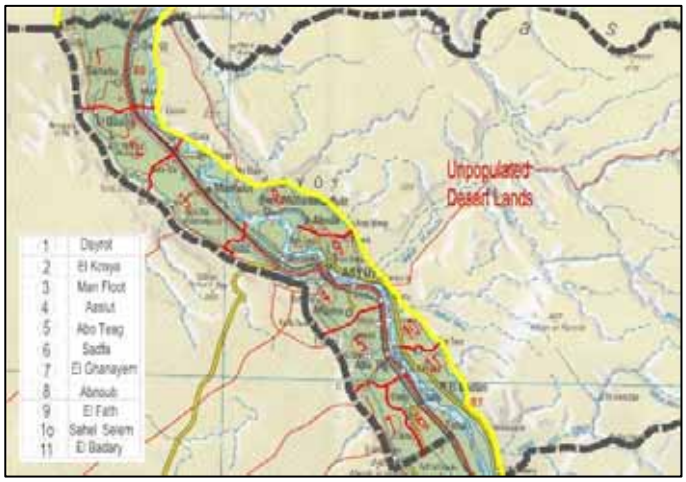
Farmers use not only loans for agricultural crops, but also agricultural investment loans. For example, El Bargia Village in Maghagha District is known as a potato production area. Most potato farmers have difficulties arising from price fluctuations. Potato prices during the high season are sometimes two or three times as much as during the low season. A potato farmer, therefore, builds cold storages by using investment loans. He charges other potato farmers 500 LE to 1,500 LE to use the storage, and other farmers come to ship their products timely. This is a good example of a successful investment loan.

Private companies usually take loans from commercial banks. For example, the private company called Trinity Company in Maghagha District borrowed the money from the National Bank of Egypt. This company was established in 2001 and its main function is drying agricultural crops to make processed products such as onion powders and tomato products. When founding the company, the owners applied for loans from the PBDAC, but the bank denied them because the requested amount was too large. They then successfully applied for loans from the National Bank of Egypt. The interest rate of the National Bank of Egypt is around 15%. The high interest rate is one of the main obstacles for expanding their business.

CHAPTER 2 SALIENT FEATURES OF ASSIUT GOVERNORATE

2.1 General Feature of the Governorate

The Assiut Governorate is situated between the Minia Governorate in the north and the Suhag Governorate in the south. The governorate capital, Assiut city is as far as 400km from Cairo. Assiut is locally and regionally recognized as the commercial center of Upper Egypt. It is a medical hub for all Upper Egypt governorates and almost the only alternative to Cairo. Assiut University is one of the first three universities established in Egypt, after Cairo and Alexandria universities.



The total area of the Governorate is 25,926km^2, out of which 1,574km^2 or 6.0% is an inhabited area. The population in 2010 is estimated at 3.7 million. The population density per km^2 for the inhabited area is therefore calculated at 2,349. The inhabited area is formed along the Nile valley and the boundary of the Governorate from the north to the south is around 100km and the inhabited land has been expanding to the east and west deserts and the width of the inhabited area in the Governorate reaches around 20km.

For the administrative structure, the Governorate consists of districts, which are also divided into local units or townships, the lowest administrative unit. A local unit consists of villages, and a village is formed with a mother village and hamlets around the mother village. There are 11 districts, 65 local units/townships, 256 villages and 888 hamlets in Assiut. Population per village in 2006 is estimated at 9,895. The Governorate capital belongs to the Assiut District, which is located in the center of the Governorate. Assiut city is the biggest city in Upper Egypt in terms of population. Table 2.1.1 shows the list of the Districts in the Governorate.

Table 2.1.1 Districts of Assiut Governorate

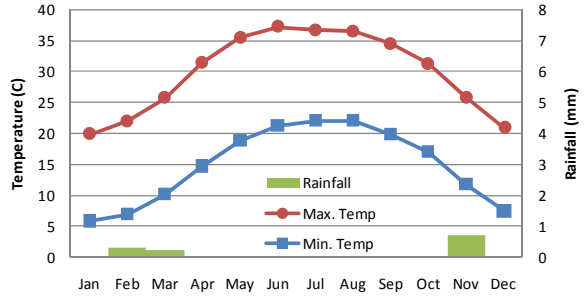
District	No. of Local Unit	No. of Village	No. of Hamlet
Dayrot	8	43	21
El Kosya	5	32	
Man Floot	8	27	25
Assiut	9	28	
Abo Teag	3	13	110
Sadfa	5	19	
El-Ghanayem	3	11	16
Abnoub	5	23	
El-Fath	7	21	91
Sahel Selem	4	17	
El-Badary	8	22	
Total	65	256	883

Source: Assiut Agriculture Directorate

2.2 Natural Conditions

Agriculture in the Assiut governorate is mainly practiced in the Nile valley (Old Land), where a canal network serves irrigation water. Desert has been reclaimed since the 1950's using the groundwater. These reclaimed lands are called New Land. The very dry climate in Assiut is categorized as desert climate. Rain occurs very rarely, and average annual rainfall is as little as 1 mm. July is the hottest month, when maximum and minimum temperatures are 37°C and 22°C, respectively, and January is the

Figure 2.2.1 Temperature and Rainfall in Assiut



Source: MSN Weather (Internet)

coldest month, when those temperatures are 20°C and 6°C, respectively. Difference of day and night temperatures is big as it reaches from 13°C to 17°C throughout the year.

2.3 Agriculture

2.3.1 Land Use

Total area of farmland in Assiut governorate is 345,260 feddan (145,009 ha), consisting of 307,035 feddan (89 %) in old land and 38,225 feddan (11 %) in new land. The cultivated area of winter crops is 308,940 feddan or 89 % of farmland, and the cultivated area of summer crops is 298,946 feddan or 87 % of farmland. The overall cropping intensity, including winter crops, summer crops and other types of crops, is as high as 191 % in the Assiut governorate.

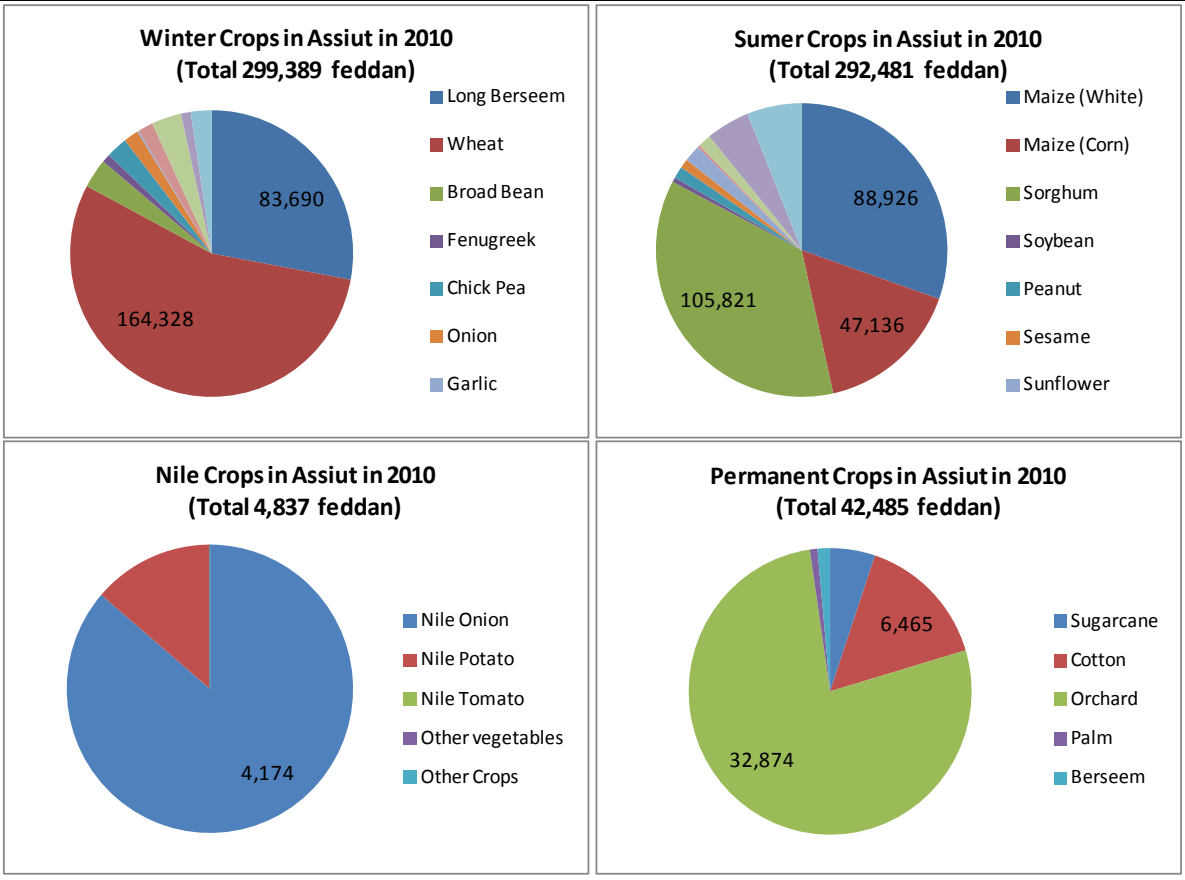
Table 2.3.1 Cropped Area and Cropping Intensity in Assiut Governorate in 2010

Item	Old Land	New Land	Total
Farmland Area (fed)	307,035	38,225	345,260
Cultivated Area (fed)			
Winter crop	284,605	24,335	308,940
Summer crop	285,400	13,546	298,946
Nile crop	12,671	1,717	14,388
Permanent crop	22,430	13,890	36,320
Total	605,106	53,488	658,594
Cropping Intensity (%)			
Winter crop	93%	64%	89%
Summer crop	93%	35%	87%
Nile crop	4%	4%	4%
Permanent crop	7%	36%	11%
Total	197%	140%	191%

Source: MALR
Note: Permanent crop includes sugarcane and cotton according to the category of MALR.

2.3.2 Crop Production

General information of crop production can be obtained from the statistic department of MALR. The following charts show share of cultivated area by crops by season during 2010. Wheat and Berseem are dominant crops in winter season. Those cultivated areas were 164,328 feddan and 83,690 feddan, respectively, and those 2 crops shared 83 % of the total cropped area of winter crops. Regarding summer crops, Sorghum and Maize (white) are dominant, of which the cultivated areas were 105,821 feddan and 88,926 feddan, respectively. The share of those 2 crops was 67 % of the total cropped area of summer crops. As for permanent crops, fruit orchard is dominant, whose area was 32,874 feddan. The cropped area of cotton has been decreased these years, because of a downward trend of the international price. During the autumn season, onion and potato are produced.



Source: MALR

Figure 2.3.1 Cropped Area in Assiut Governorate in 2010

Recent crop production by district is informed by the Agricultural Department of Assiut Governorate. Cropped area of the main horticultural crops are summarized in the following table.

Table 2.3.2 Recent Cropped Area of Major Horticultural Crops in Assiut Governorate (1/2)

Crop	Season	Area (feddan)	Major Production District (Area in feddan)		
Major Crops					
Wheat	*2009*	168,997	El-Kosya (25,799)	Assiut (19,953)	Dayrut (19,677)
Berseem	*2009*	80,248	Abnoub (13,996)	Man Falout (13,718)	Dayrut (9,896)
Maize	*2009*	137,363	Dayrut (22,818)	Assiut (22,495)	Man Falout (18,274)
Sorghum	*2009*	105,486	Abnoub (19,784)	El-Kosya (19,321)	Man Falout (18,865)
Cotton	*2009*	8,528	Assiut (2,221)	Abo Teag (1,820)	Man Falout (1,274)
Summer Vegetables					
Tomato	*2009*	4,688	Dayrut (1,237)	El-Kosya (985)	New Land (943)
Watermelon	*2009*	3,469	Dayrut (1,433)	El-Kosya (899)	Man Falout (627)
Cowpea	*2009*	1,601	Abo Teag (967)	Man Falout (262)	Sedfa (146)
Melon	*2009*	1,539	Dayrut (509)	Man Falout (379)	Abo Teag (368)
Taro	*2009*	1,356	Dayrut (1,199)	El-Kosya (137)	
Winter Vegetables					
Tomato	*2008/09*	9,549	New Land (3,291)	Assiut (2,724)	Dayrut (1,430)
Taro	*2008/09*	772	Dayrut (772)		
Eggplant	*2008/09*	757	New Land (589)	Dayrut (81)	
Pepper	*2008/09*	460	Newland (316)	Dayrut (91)	

Table 2.3.2 Recent Cropped Area of Major Horticultural Crops in Assiut Governorate (2/2)

Crop	Season	Area (feddan)	Major Production District (Area in feddan)		
Medical and Aromatic Plants					
Basil	*2009*	3,619	Abnoub (3,299)	Dayrut (270)	
Fennel	*2008/09*	1,480	Man Falout (992)	Dayrut (248)	El Ghanaym (173)
Cumin	*2008/09*	1,031	Man Falout (382)	El-Kosya (171)	Assiut (150)
Anise	*2008/09*	439	Man Falout (128)	Dayrut (117)	New Land (112)
Fruits					
Citrus	*2010*	13,678	El-Badary (5,884)	Sahel Selem (2,960)	El-Fath (1,282)
Pomegranate	*2010*	6,974	El-Badary (4,254)	Sahel Selem (820)	El-Fath (600)
Grape	*2010*	3,237	El-Fath (757)	El-Kosya (653)	Sahel Selem (585)
Mango	*2010*	2,817	El-Badary (2,112)	El-Kosya (186)	Sahel Selem (134)
Olive	*2010*	2,670	El-Fath (348)	Abnoub (190)	Assiut (180)
Banana	*2010*	2,230	Assiut (1,199)	Sahel Selem (419)	El-Fath (348)

Source: Assiut Agricultural Directorate
Note: For the vegetables and medical & aromatic plants, new land is taken into account apart from districts.

2.3.3 Distribution of Strategic Crop

There are specific areas producing strategic crops, which are non-traditional horticulture crops to bring cash income to farmers, as shown in the following figure.

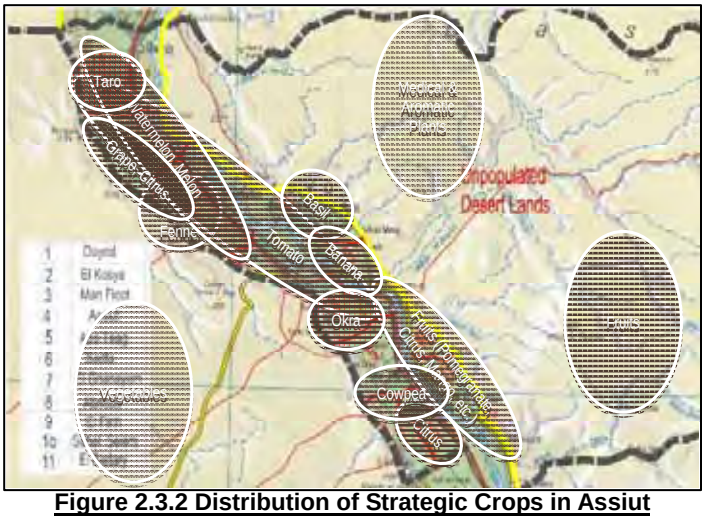


Figure 2.3.2 Distribution of Strategic Crops in Assiut

- Tomato: North to central districts produce Tomato dominantly.
- Okra: Okra is produced in Assiut district dominantly.
- Cowpea: Cowpea produced in Abo Teag district dominantly.
- Watermelon and Melon: Northern districts produce watermelon and melon dominantly.
- Taro: Taro is produced in Dayrut district dominantly.
- Pomegranate: Southeastern part of Assiut is a center of pomegranate production in the country (share of production to the country is 87% in 2008)
- Citrus and Mango: Southern part of Assiut produces citrus and mango dominantly.
- Basil: Basil is first medical and aromatic plants in the governorate and produced in Abnoub District dominantly.
- Fennel: Fennel is second medical and aromatic plants in the governorate and produced in Man Floot district dominantly.

2.3.4 Agriculture by Zone

In the discussion among the Project Team and officers of District Agriculture Directorates, 11 districts in Assiut governorate were categorized into 3 zones in this Project. The features in agriculture of these zones are as follows.

Zone	Feature of Agriculture
Northern Districts	• This zone includes 4 districts, namely Dayrut, El-Kosya, Man Floot, and Assiut • Vegetable production in this zone is relatively high in the governorate. Fruit-type vegetables are common but leaf-type vegetables are not. There are some greenhouses mainly producing seedlings of vegetables. • Man Faloot district is a center of medical and aromatic plants production, including Fennel, Cumin and Anise.
South Western Districts	• This zone includes 3 districts, namely Abo Teag, Sadfa, and El-Ghanayem. • Various kinds of fruit and vegetables are produced in this zone. • Production of medical and aromatic plants is relatively low.
Eastern Districts	• This zone includes 4 districts, namely Abnoub, El-Fath, Sahel Selem, and El-Badary. • Northern part of Abnoub district produces basil intensively. • The southern part of this zone is specialized in a fruit production. Main fruits in this zone are Citrus, Pomegranate, Mango, Grape, Olive and Banana. Pomegranate is a famous in the country.

2.3.5 Cropping Calendar

The cropping season is generally divided into 3 categories, namely winter crop, summer crop, and Nile (autumn) crop. Cropping season of major crops is given in the following chart.

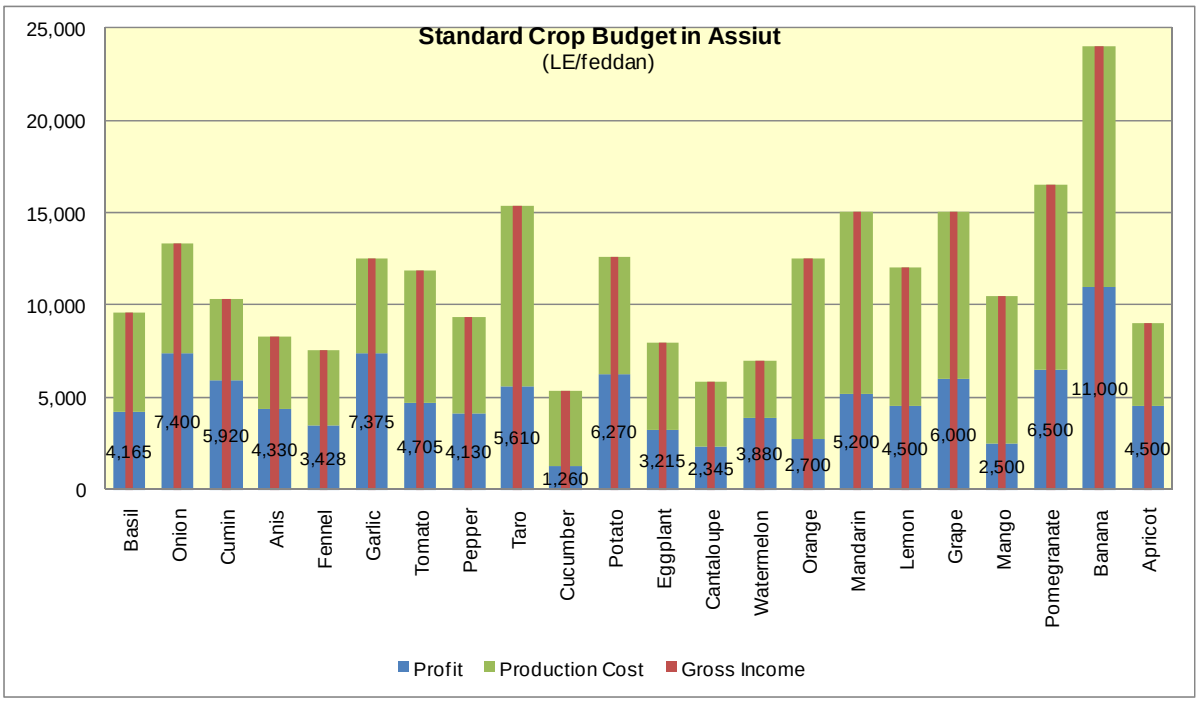
Crop	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Summer Crop												
Cotton			3/15 - 4/15						8/15 - 9/15			
Maize					5/15 - 6/15					10/15 - 10/31		
Vegetables			3/15 - 4/15				7/1 - 8/15					
Reehan					5/1 - 5/15				9/15 - 10/15			
Winter Crop												
Wheat					5/1 - 5/31						11/15 - 11/30	
Legumes				4/15 - 4/30						10/15 - 10/31		
Vegetables	1/1 - 2/15								9/15 - 10/15			
Medical plant				4/15 - 5/31							11/1 - 11/30	

Source: Assiut Agricultural Directorate

Figure 2.3.3 Standard Cropping Calendar in Assiut

2.3.6 Crop Budget

The standard crop budget of major medical and aromatic plants, vegetables and fruits in Assuit governorate is shown in the following chart. The net income of the medial and aromatic plants ranges from LE 3,000 to LE 6,000 per feddan. In case of vegetables, the net income is LE 1,300 to LE 7,400. Onion, garlic and potato are high return vegetables. Net income of tomato, the most common vegetable, is LE 4,700 in winter and LE 4,800 in summer. Net income of fruits varies widely by crop. One feddan of banana can give the highest return as LE 11,000, and olive can give only LE 1,000. Among the important fruits, net return of pomegranate, grape, and mandarin is LE 6,500, LE 6,000 and LE 5,200, respectively.



Source: Assiut Agricultural Department

Figure 2.3.4 Standard Crop Budget in Assiut

2.4 Farm Economy and Gender in Farming

Farm economy survey was carried out for 129 households from 6 villages selected (3 usual villages and 3 potential villages according to the classification made at the selection) in this Project. This section describes the farm economy based on the results of the survey.

2.4.1 Farm Economy

(1) Farmland scale

Small scale farmers, whose farm scale is less than 3 feddan, share about 90 % of the whole farm household in the Assiut Governorate. The farm households owning less than 1 feddan share about 60 % of the entire faming households in the Assiut Governorate.

Distribution of farm scale in 6 villages of the socio-economic survey is shown in Table 2.4.1. The trend of distribution of farm scale in 6 villages is almost the same as for the Assiut Governorate overall. In Arab El Kadadeh village, where basil is cultivated in a large area, the small scale farmers share about 80% of the village, but share of farmers owning more than 3 feddan, is higher than the other 5 villages.

Table 2.4.1 Distribution of farmland in the target villages of the Rural Economy Survey

District	Village Name	0-1	1-3	3-5	5-10	Over 10	Total (%)
El-Kosya	El Ansar	59.6	30.8	4.9	3.3	1.5	100
El-Fath	Manshyet El Maasra	75.5	21.6	2.4	0.5	0	100
Sadfa	Nazlet EL Ablak	84.1	12.4	1.3	1.3	1.0	100
Man Floot	El Hawatka	58.9	32.0	6.1	2.4	0.6	100
Abnoub	Arab El Kadadeh	33.9	47.0	13.5	5.4	0.2	100
El-Badary	El Egal El Bahry	69.9	23.0	5.1	1.8	0.2	100

Source: Village cooperative, Land registration data

(2) Cultivated crops in 6 villages

The traditional crops, such as wheat, berseem, and maize, are major crops in 6 villages, which are target villages of the socio-economic survey. In addition, some profitable crops were cultivated in 6 villages. El Ansar and El Hawatka, Arab El Kadadeh, and El Egal El Bahry are located in the special area producing tomato, basil, and pomegranate, respectively.

The respondents in 6 villages cultivate about 20 kinds of cereals, vegetables, ornaments, and fruits. Those crops are categorized into 3 types of crops, such as traditional crops consisting of wheat, maize, beans, other cereals and fodders, seasonal profitable crops consisting of potatoes, garlic, tomatoes, basil, other vegetables and other seasonal ornaments, and perennial profitable crops consisting of pomegranates, sugarcane, marjoram, other fruits and perennial ornaments. Their cropping patterns are composed of those 3 types of crops, such as traditional, seasonal profitable, and perennial profitable crops. Table 2.4.2 shows the distribution of the cropping pattern in 6 villages, composed of 3 types of crops.

Table 2.4.2 Distribution of type of cropping pattern

	No. of respondents	T++	T+A	T+P	T+A+P	A+P	A++	P++
El Ansar	23	22	1	0	0	0	0	0
Manshat El Maasra	19	17	2	0	0	0	0	0
Naslet EL Ablak	23	20	3	0	0	0	0	0
El Hawatka	21	14	6	0	1	0	0	0
Arab El Kadadeh	22	7	0	7	0	0	0	8
El Egal EL Bahry	21	16	5	0	0	0	0	0
合計	**129**	**96**	**17**	**7**	**1**	**0**	**0**	**8**

(Unit: Number of respondents)

T++: Only Traditional Crops
T+A: Traditional crops and seasonal profitable crops
T+P: Traditional crops and perennial profitable crops
T+A+P: Traditional crops and seasonal and perennial profitable crops
A+P: Seasonal and perennial profitable crops
A++: Only seasonal profitable crops
P++: Only perennial profitable crops

Source: JICA Study Team

As is obvious from the above table, respondents' cropping patterns in 6 villages are represented by the following 4 patterns.

- Pattern A: Only Traditional Crops
- Pattern B: Traditional Crops and Seasonal Profitable Crops
- Pattern C: Traditional Crops and Perennial Profitable Crops
- Pattern D: Only Perennial Profitable Crops

Pattern A, composed of only traditional crops, shares 74 % of all respondents' cropping patterns.

Table 2.4.3 shows the typical cropping pattern and the typical annual net income for 1 feddan. Pattern B is divided into Pattern B-1, composed of wheat and winter crops, and maize, and Pattern B-2, composed of wheat, maize, and summer crops. According to the case studies in the socio-economic survey, seasonal profitable crops in winter and in summer are represented by tomato and okra, respectively. Perennial profitable crops are represented by pomegranate in El Egal El Bahry village. Those annual and perennial profitable crops generate higher net income than that of traditional crops.

Table 2.4.3 Typical Cropping Pattern and their net incomes for 1feddan

Pattern		Net Income (LE/year)	Winter Crop			Summer Crop		
			Crop	Area (fed)	Profit (LE)	Crop	Area (fed)	Profit (LE)
A	Traditional crops	6,200	wheat	0.5	2,000	maize	1.0	2,200
		(2,200)	berseem	0.5	2,000			
B-1	Traditional + Winter profitable crops	8,100	wheat	0.5	2,000	maize	1.0	2,200
		(4,100)	tomato	0.5	3,900			
B-2	Traditional + Summer profitable crops	8,000	wheat	0.5	2,000	maize	0.5	1,100
		(4,000)	berseem	0.5	2,000	okura	0.5	2,900
C	Traditional + Perennial crops	9,100	wheat	0.5	2,000	maize	0.5	1,100
		(5,100)	pomegranate	0.5	6,000	(perennial)		
D	Perennial crops	11,900	pomegranate	1.0	11,900	(perennial)		
		(7,900)						

Source of cost and income: Assiut Agriculrural Directorate
( ): Net income - rent. Rent = LE4,000/year (surveyed by the Study Team)

(3) Annual net incomes of respondents in 6 villages

Distribution of respondents' agricultural net incomes by cultivated area is shown in the following Figure 2.4.1. The following figure shows that the range of respondents' profits at the same area of farmland is as wide as from thousands to tens of thousands. It means that farmers have the possibility of generating higher incomes by producing profitable crops and other means.

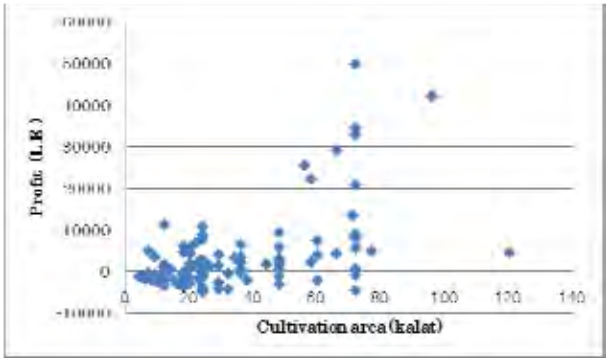


Figure 2.4.1 Distribution of Samples by Income and Cultivated Area

(4) Animals in household

87 respondents (67%) among 129 respondents in the socio-economic survey breed large animals, such as buffalos and cows in order to get supplemental income. About 70% of respondents also have donkeys. In addition, about half of the respondents not breeding large animals prefer having large animals for increasing their incomes. On the contrary, in case of respondents owning less than 0.5 feddan, the share of respondents who want to have large animals is as small as 25 %. The fodder crops should be involved in the proposed cropping pattern in the development plan in order to supply feed for animals.

(5) Agricultural tools, machines and equipment

About 20% of respondents own irrigation pumps. In case of respondents owning less than 1 feddan, the share of farmers owning irrigation pumps was as small as 10%. Regarding tractors, almost all respondents, except some respondents owning over 2 feddan, did not have them. Regarding harvesters, sprinklers for irrigation, and sprayers, almost all the respondents do not have them.

(6) Off-farm Income

About 30 % of respondents got incomes from off-farm jobs. In addition, about 95% of respondents got less than LE1,000 from off-farm jobs annually. In order to increase farmers' incomes, increasing agricultural incomes is indispensable, because farmers have the possibility of increasing their income by selecting profitable crops and other improvement as mentioned above.

2.4.2 Gender in Farming

In the socio-economic survey, 129 small scale farmers and their wives were interviewed about (1) Women's roles in farming, (2) Means of increasing their incomes, (3) Issues with their farming.

(1) Women's roles on farming

Women's roles in farming operation by operation unit, such as land preparation, seeding, irrigation, weeding, spraying, harvesting, and transportation of products were inquired about to farmers and their wives in 6 villages. Both respondents of men and women answered that women's role in farming was not so high, because farming operation is usually carried out outside of their residences. The respondents especially considered that spraying pesticide and insecticide possibly affecting human's health and transporting work requiring heavy duties should be avoided in women's farm work. On the contrary, 10% of respondents owning less than 1 feddan answered that women's contributions, especially on land preparation and harvesting requiring much labor, were important.

Regarding the difference of the location, both of men and women respondents only in Manshet El Maasra Village considered women's contribution to farming was very important compared to other villages. The reasons are presumed as: 1) some housewives in the village usually work on their farms as their daily work, according to the report of the workshop given on 14th June 2010, 2) the wage of laborers is expensive, caused by lack of laborers in the village. In case of farmers with less than 1 feddan, farmers might have a strong incentive to use human power in their household in order to reduce production cost, and 3) some projects increasing awareness of women might have been carried out in the past.

(2) Women's roles on decision-making in farming

The women's roles on decision making in farming, such as selection of cultivating crops, purchasing agricultural inputs, purchasing agricultural tools and machines, and negotiating prices with traders, were inquired about. Both men and women considered women's roles in decision making on farming to be not so high. However, a share of answers answering "very important" was higher than the case of farming operation. The women's roles in the decision making on selection of cultivating crops were especially considered as "very important". Comparing with the difference of the location, both respondents of men and women only in Manshet El Maasra village considered women's contribution to decision making about farming was very important, the same as the trend of farming operations.

(3) Means of income generation

Both respondents of men and women answered that a household animal was the most preferable means of income generation. Figure 2.4.2 shows the share of answers about preferable means of income generation. The share of respondents of women selecting a household animal as the most preferable means of income generation was higher than respondents of men. Breeding a household animal is generally considered as the woman's role. It was confirmed that the role of women on breeding household animals was very important through the socio-economic survey.

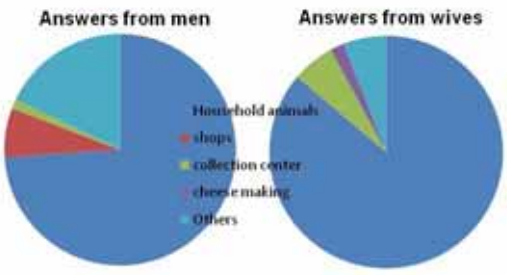


Figure 2.4.2 Share of answers about preferable means of income generation

(4) Issues on farming

The highest 3 and lowest 3 prioritized issues on farming are shown in Table 2.4.4. The priority of men and women for issues on farming was almost same. It is presumed that issues of farming are shared and discussed well between husband and wife.

Table 2.4.4 Difference of Awareness on Issues on Farming between Men and Women

		Respondents of men		Respondents of women
Highest prioritized issues	Max ↑	Lack of Irrigation water	Max ↑	Lack of Irrigation water
		Lack of information about the prices of agricultural products and methods of modern agriculture		Hard labor of agricultural work
		Low prices of crops		Low prices of crops

2.5 Distribution Structure of Agriculture Produce

2.5.1 Distribution Structure of Focused Crops

The Study focused on tomato, pomegranate (representing fruits) and basil (representing medical and aromatic crops) in Assiut Governorate. Here describes the distribution system of these focused crops in Assiut Governorate.

(1) Tomato

Tomato is the most popular in the area as well as in Egypt. The harvesting season extends long with the variety of cropping pattern, but in summer season high temperature in the area affects the growing tomato. There are also off-season crops, and prices are quite highly fluctuated at around 5 times. There are many tomatoes left in the field not to harvest. Also there are many damaged and lost during the harvesting and handling. There are no tomato processing factories except in Cairo. Introducing new varieties or new planning technology is required to realize year-round production and shipping. Figure 2.5.1 is the present distribution flow of tomato in the area.

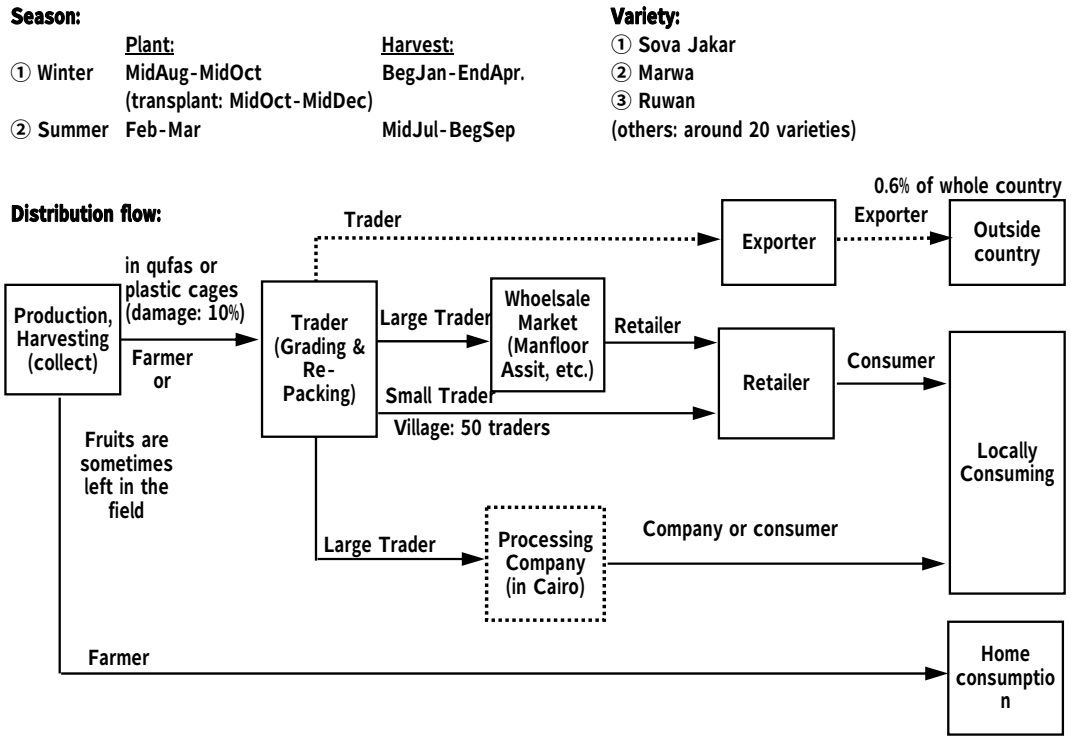


Figure 2.5.1 Distribution Flow of Tomato

(2) Pomegranate

Pomegranate in southern Assiut is very famous in Egypt and Arab countries. Even small-scale farmers in the area plant pomegranate on their whole farm land. Grading of it is necessary to sell to the outside countries or even outside the District. However, as farmers want to sell all their products, even the low grade, the price becomes lower. Low grade pomegranates are sometimes thrown away in the field because the traders are not willing to buy them. There are a few traders in the area and some of them become processors for grading, packing or casing. There are also private cold storage and grading & packaging companies in Assiut and Minia as well as in Cairo. Arab countries prefer the middle class of 300g per fruit. High quality class is exported to European countries and the USA. Figure 2.5.2 is a present distribution flow of pomegranate in the area.

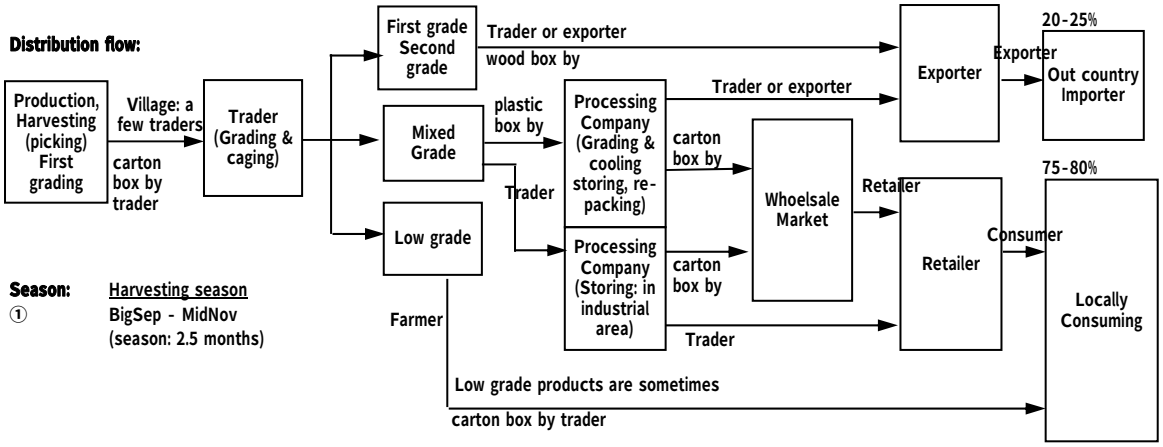


Figure 2.5.2 Distribution Flow of Pomegranate

(3) Basil

Basil is one of the specialty crops and planted only for export in southeastern Assiut, which is quite suitable for basil planting with sandy soil. Local consumption is around 15% in Egypt. There are a few traders in the area and some processing companies for export in Fayum, Cairo and Alexandria. Farmers plant it with a limited water supply, and are obliged to dry it for selling, and use the precious farm land for drying. Figure 2.5.3 is a present distribution flow of basil in the area.

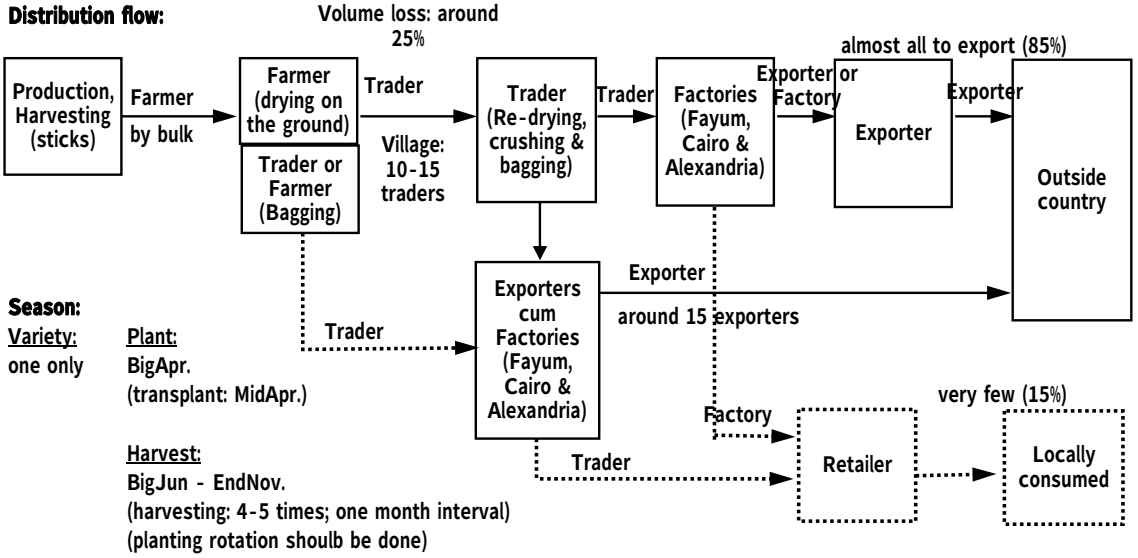


Figure 2.5.3 Distribution Flow of Basil

2.5.2 Markets in Assiut

A wholesale market was found on the fringes of Assiut city in an area called "Arab El Madabegh ." The market does not record prices of products and no longer functions as a market for wholesale traders. It operates as a location for wholesale traders. The difference being is that there is no central managerial oversight on the traders or the trading activity taking place.

In the market, the management revenue sources were the entry gates of the market. Fees were collected per weight or volume of product leaving the market. The revenues covered the costs of services provided for the traders and incentives for the management and the market board members. In 1994, the gates operation was auctioned off for private management and operation after doubt of fraud of the revenues were established. The role of the markets management was limited then to collection of installments from the traders who bought lots in the market with payment schedules over 10 years. In 2007, a decree was issued to direct the markets' revenues to the central budget. The incentives were lost and the board no longer met. Their functions became obsolete especially after all the traders had paid the installments in full.

Apart from the capital Arab El Madabegh Market in Assiut City, there are numbers of the markets with different characteristics in the Governorate. Table 2.5.1 below shows the number of markets by category in the Assiut Governorate. It should be clarified that what is referred to as wholesale market in the table is a shop known as a 'shona' or a 'wekala'. These are privately operated shops with some storage area and act more like an intermediate trader than a wholesale trader. The operators of these shops buy mainly fruits and vegetables and include some dry vegetables as well to be distributed to the retailer. They operate on a commission basis and usually give one day to two day credit facility for the retailers.

Table 2.5.1 Markets in Assiut

	District	Wholesale Market		Weekly Market (retailer)			Private Market		(Market)		Total
		Wholesale	Retailer	once/w	twice/w	daily	Street	Private	(Vegetable)	(Fruit)	
1	**Dayrut**	5	7	0	0	0	10	2	(2)	(2)	**24**
2	**El Kosya**	1	5	5	0	2	7	1	(7)	(7)	**21**
3	**Manfloot**	4	8	8	0	8	3	2	(3)	(3)	**33**
4	**Assiut**	1	1	2	0	25	5	2	(25)	(25)	**36**
5	**Abo Teag**	5	20	12	0	20	20	1	(3)	(3)	**78**
6	**Sedfa**	2	5	4	0	8	5	2	(3)	(3)	**26**
7	**El Ganayem**	0	2	2	0	2	1	2	(2)	(2)	**9**
8	**El Badary**	4	6	2	0	2	5	1	(5)	(5)	**20**
9	**El Sahel**	0	4	15	0	2	10	1	(2)	(2)	**32**
10	**Abnoub**	4	6	4	0	2	10	1	(5)	(5)	**27**
11	**El Fath**	3	3	4	0	2	8	1	(4)	(4)	**21**
	Total	**29**	**67**	**58**	**0**	**73**	**84**	**16**	**(61)**	**(61)**	**327**

Source: Assiut Governorate, Agriculture Directorate,

As being not organized, there are no official records of the prices transacted at the wholesale market. According to the interviews to some of the traders and wholesalers gathering at the Arab El Madabegh market, the following trends of the prices of the agricultural produce are captured.

Table 2.5.2 Wholesale Market Prices in Assiut (Arab El Madabegh)

Crop	Production Area	Highest Price/kg		Lowest Price/kg		Remarks
		Month	Price (LE)	Month	Price (LE)	
Tomato	Alex,El-Ismalia, El-Aresh,Assiut	Apr	2.50	Feb	0.50	Yearly-round shipping, 1kafas=22kg、shipping tomato in Assiut during Dec-May
Potato	Grape, (white) Alex	Aug	2.00	Jan	0.70	Yearly-round shipping, one portion= 50kg
Grape (white)	El-Sahel, Assiut	Jul	2.25	Aug	1.50	Shipping for three months, one box=10kg
Grape (red)	El-Minia	Aug	2.00	Sep	1.25	Shipping for three months, 1kafas=20kg Yearly-round shipping
Grape (bez)	Cairo	Jul	3.00	Sep	2.00	Shipping for four months, 1kafas=20kg
Cucumber	El-Minia,Assiut	Jul	1.00	Sep	0.20	Yearly-round shipping, one portion= 50kg
Watermelon	Alex	—	—	—	—	Selected by size
Onion (red)	El-Sharkeya	Aug	1.15	Jun	0.75	Yearly-round shipping,
Onion (white)	El-Sharkya	Jul	1.50	Sep	1.00	Yearly-round shipping, one portion = 50kg
Eggplant (three varieties)	Assiut	Aug	0.80	Oct	0.40	Yearly-round shipping, one portion= 45kg
Green chili	El-Minia	Dec	2.00	Jul	0.80	Yearly-round shipping, one portion= 40kg
Green pepper	El-Minia	Feb	2.50	Aug	1.50	Yearly-round shipping, one portion= 40kg
Guava	Alex	Aug	3.50	Oct	0.50	Yearly-round shipping, 1kafas=20kg
Zucchini	Alex	Aug	1.25	Nov	0.40	Yearly-round shipping, one portion= 45kg
Mango (Zebdya)	El-Ismaelia	Jun	7.00	Sep	6.00	Shipping for three months, 1kafas=20kg
Mango (Sokrya)	El-Ismaelia	Jul	9.00	Sep	6.50	Shipping for three months, 1kafas=20kg
Mango (Red Kety)	El-Ismaelia	Dec	20.00	Aug	8.00	Shipping for five months, one box =10kg
Lime	El-Behera	Sep	4.00	Jul	0.80	Yearly-round shipping, one portion= 50kg
Melon	Alex	Aug	1.25	Dec	1.00	Shipping for four months 1kafas=24kg
Green beans	Cairo	Mar	5.00	Jul	2.00	Yearly-round shipping, one portion= 40kg
Coriander	Assiut	Aug	3.00	Feb	0.50	Yearly-round shipping, bunch
Dill	El-Minia	Jul	4.00	Sep	0.50	Yearly-round shipping, bunch
Italian Parsley	Assiut	Jul	2.00	Sep	0.50	Yearly-round shipping, bunch

The Study Team, August 2010

2.5.3 Post-harvest and Processing Facilities

In El Zaraby village in Abo Teag District, the small scale farmers mainly plant wheat and maize with steady prices. The characteristic of this village is that the many small scale farmers do not plant vegetables and buy them from the retailers in the villages. There are some vegetable retailers in the village; a certain retailer of them has been selling vegetables for 20 years. Planting main crops would be the first priority for the small scale farmers for their home consumption, and the vegetable retailers and small scale flour mills are necessary in the village.

In El Ghanayem District, cumin planning was promoted and an oil extracting machine was erected by the private company in 2008. This trial failed because the production was poor due to diseases and the company lost its motivation. At present, farmers are planting beet promoted by the Government. This shows that when the condition is poor for a steady and continuous volume of crops being moved in, it is difficult to introduce the post-harvest and processing facilities.

In Arab El Kadadeh village in Abnoub district, basil planting is popular. Basil harvesting can be conducted for 4-5 months. Here, it is sold dried, so the price of this becomes low at one third or fifth. Introduction of a drier would be highly expected. However, it should be taken into consideration, such as obtaining the steady and continuous quantity of raw materials, obtaining the land for establishment of facility, selection of operation and maintenance organization, technology transfer, etc.

In El Ghorayb village in Sahel Selem district, there is an industrial area with approximately 1,000 feddan, which has 12 factories such as for juice making, cold storage, distribution center, etc., is contributing to a reduction of unemployment. In the future, it is expected to establish the industrial area like this in any district for the purposes of trading places, obtaining of steady selling prices,

reduction of unemployment, etc.

2.6 Farmers' Organization

2.6.1 Present Situation of Agricultural Cooperative

(1) Administrative Organization

The General Directorate of the Agricultural Cooperation consists of six departments: 1) the Agricultural Cooperative Follow-up and Agricultural Cooperative Account, 2) the Agricultural Cooperative Projects and 3) the Agricultural Cooperative Registration 4) the Agricultural Cooperative Organization 5) Agricultural Cooperative Guidance 6) Agricultural Cooperative Marketing. Roles of these departments are as follows:

Table 2.6.1 Organization and Responsibilities of the General Directorate of the Agricultural Cooperation

Department	Responsibility
Agricultural Cooperative Follow-up and Agricultural Cooperative Account	To follow up on the work of the administration and the local cooperative (associations) at the level of the governorate and account for each sector
Agricultural Cooperative Projects	To supervise and control the existing projects such as cattle fattening and beekeeping projects
Agricultural Cooperative Registration	To collect data, budgets and annual reports on local cooperative activities.
Agricultural Cooperative Organization	To supervise, control and organize the works on the level of governorate, district and local administrations and in local, combined and central cooperatives.
Agricultural Cooperative Guidance	To supervise the agricultural cooperatives based on administrative council's decisions.
Agricultural Cooperative Marketing	To supervise and control the agricultural cooperative marketing for agricultural crops, animal products, vegetables and fruits and also to follow up on data and statistics

(2) Agricultural Cooperatives

In Assuit Governorate, there is a central multi-purpose agricultural cooperative. Under this central cooperative, there is a combined multi-purpose agricultural cooperative in each District (total eleven Districts). Within the district, there are villages, each of which has a local multi-purpose agricultural cooperative. This local cooperative at the village level is organizing farmer groups in the village. In terms of specialized cooperative, four cooperatives are organized in Assiut Governorate, namely, 1) Vegetable & Fruit cooperative, 2) Crop marketing cooperative (cotton, wheat, maize), 3) Honey bee cooperative and 4) Livestock cooperative. Table 2.6.2 shows the number of multi-purpose agricultural cooperatives and specialized cooperatives in Assiut Governorate.

There is no cooperative for potato since the potato production in Assiut is not much. There is no specialized cooperative for medical & aromatic crops, though they are famous in Assiut. Most of the medical & aromatic producers are small-scale farmers. Traders of the medical & aromatic crops are relatively big and there are few medical companies buying the crops. There is no post-harvest facility for the crops and therefore farmers have

Table 2.6.2 Number of Agricultural Cooperatives

		Agriculture cooperative				Specified Agriculture Cooperatives					
No.	**District**	Local	Common	Central	Sub total	Vegetable & fruit Coop.	Crop marketing Coop.	Honey bee	Livestock	Sub total	Total
1	Dayrut	44	1	0	45	0	0	0	0	0	45
2	El Kosya	31	1	0	32	0	0	0	0	0	32
3	Manfloot	27	1	0	28	0	0	0	0	0	28
4	Assuit	26	1	0	27	0	0	0	0	0	27
5	Abo teag	12	1	0	13	0	0	0	0	0	13
6	Sadfa	18	1	0	19	0	0	0	0	0	19
7	El Ghanayem	9	1	0	10	0	0	0	0	0	10
8	Abnoub	21	1	0	22	0	0	0	0	0	22
9	El Fath	22	1	0	23	0	0	0	0	0	23
10	Sahel Selem	18	1	0	19	0	0	0	0	0	19
11	El badary	22	1	0	23	0	0	0	0	0	23
12	At Governorate level	0	0	1	1	1	1	1	1	4	5
	Total	250	11	1	262	1	1	1	1	4	266

Source: Assuit Governorate Agriculture Directorate

to sell the produce at low price.

2.6.2 Present Situation of Other Organizations

Beside agricultural cooperatives and BDAC, there are no farmer's associations in the villages for agricultural products except for the ones organized by donors. In terms of social welfare, Community Development Associations, Islamic Societies, El-Forsam Society, Friend Society and Love Society, etc. provides the following services to support small scale-farmers.

2.7 Agricultural Extension System

The agricultural extension services covering the Assiut Governorate are in charge of the department of agricultural extension under the general administration of agriculture affairs in Assiut Governorate. The department of agricultural extension consists of five sections, (1) agricultural extension program (2) livestock extension (3) agricultural crops advancement (4) rural development (5) method of agricultural extension. Table 2.7.1 summarizes the role of each section.

Table 2.7.1 Organization and Responsibilities of the Department of Agricultural Extension

Section	Responsibility
Agricultural Extension Program	To formulate an annual training program for agricultural extension engineers on governorate, district and village level, To prepare an extension program plan for major crops and guidance for farmers
Livestock Extension	To prepare and implement seminars and training programs for advancement of animal farm and livestock fattening, To prepare and implement programs including livestock control diseases in cooperation with the veterinary section, To dispatch veterinary convoys to the level of the village
Agricultural Crops Advancement	To implement training programs for improving crops, To cooperate with research centers and the faculty of agriculture in Assuit University, To contribute to produce and to offer highly qualified seeds for different crops.
Rural Development	To prepare extension programs for rural women training on food industries, milk and environmental craft products, To heighten an awareness and training of rural leader's women on family planning.
Method of Agricultural Extension	Methods of agricultural extension include the following contents: Fields for extension, Field visit -days and harvesting, Vehicles with equipment to use for demonstration of extension services, Farmer's Field School, Equipment for extension services such as projector, computer, video, screen, data file, audio and visual equipment.

There are 18 extension centers in the Governorate in Assuit, El Fateh, Dayrot, Abo Teeg, El Kosya, Sahel Salem, Manfloot, Abnoub districts. Now, training of governmental employees engaging in agricultural extension services is being conducted according to the annual extension program prepared by Agricultural Extension Division. Extension centers have cooperated with research centers such as (1) Nutrition Research center in Cairo, (2) Agricultural Research Center-Expert System in Cairo, (3) Agriculture Research Center in Assuit, (4) Research Institute of Plant Protection in Assuit, (5) Research Institute of Veterinary-medicine in Assuit (6) Food and Agricultural Organization-FAO in Cairo (7) Ministry of Commerce and Industry-monitoring or following up in Cairo.

Major topics between extension and research centers focus on (1) seminar on healthy food (2) recycling agricultural waste and how to use it in the best way (3) modern methods of agricultural pest control project (4) seminars on H1N1 (5) training program on H5N1 (6) training cycle about post harvest transactions. In 18 extension centers in Assuit Governorate, extension activities for regular services and the above major topics have been carried out by means of seminars, filed visits and training for extension engineers and farmers.

Table 2.7.2 List of Training Courses in 2007, 2008, 2009 and 2010

Training Course	Times held, (No. of Trainee)		
	2007	2008	2009
Legumes & Oil crops	3, (32)	4, (36)	4, (32)
Fodder crops	2, (40)	1, (20)	2, (37)
Agricultural intensification	-	4, (70)	4, (50)
Apiary	-	1, (-)	1 (40)

2.8 Agricultural Finance

As described in the chapter of Minia Governorate, PBDAC, CDA, SFD etc. are working in Assiut Governorate. In Assiut, PBDAC has 7 branches and 63 BDAC. Beside the banks, there is an association which is called ASBA (Assiut Business Association). The purpose of this association is to support the farmers' group and small scale entrepreneurs through providing loans, micro-finance programs, and other activities. It was established in 1996, and has 211 branches in Egypt. According to the manager of the Assiut branch, they have a 19% market share of the micro-finance program in Egypt. They have provided loans to farmers' associations which were organized by the project of CARE, "Shams".

Regarding access to loans through projects, there is a project which is carried out by IFAD (International Fund for Agricultural Development) in Assiut. The Project called "Rural Development Project" started in July 2008, and it will last for 5 years. The main object is to provide loans to farmers in order to improve their livelihood. The loan is provided through the PBDAC with a 7% interest rate. It has been carried out in 88 villages in Assiut Governorate. The activities not only support existing farmers' groups, but also they support establishing new farmers' associations. The project covers governorate of Beheira, Qena, and Assiut. In Assiut, the project reached 10 million pounds by March 2010, and around 4,700 projects have been carried out.

Table 2.8.1 Rural Development Project

Animal Production	Trade	Service	Agriculture	Industrial	Total
2412	1247	631	180	230	4712

The following table indicates borrowers and the amount of loans of the PBDAC by district for the last 3 years. Total borrowed amount reached around 2.5 billion and there are 85 thousand borrowers. Repayment rate is kept about 90%.

Table 2.8.2 Number of Customers and Amount of Loan of PBDAC in Assiut

	2,008			2009			2010		
Branch	Total Loans	Number of Customers	Repayment	Total Loans	Number of Customers	Repayment	Total Loans	Number of Customers	Repayment
Dayrut	223,633	8,954	97%	220,774	11,240	98%	183,767	10,307	96%
El Kosya	212,599	9,871	99%	232,204	10,624	98%	211,053	9,004	96%
Man Faloot	260,715	6,954	97%	270,954	6,014	96%	254,797	4,980	93%
Assiut	241,935	13,684	98%	247,432	14,514	98%	240,141	12,961	97%
Abo Taeg	236,466	7,514	94%	241,443	8,214	93%	247,991	7,164	91%
Sadfa	184,233	4,954	98%	182,749	5,124	95%	178,627	4,299	94%
El Ghanayam	88,327	4,230	98%	85,361	4,521	96%	82,249	3,566	93%
El-Badary	324,572	4,987	93%	368,464	5,214	89%	339,232	4,728	75%
Sahel Selem	139,249	4,141	94%	143,331	4,954	93%	130,409	4,387	89%
Abnoub	374,908	12,365	88%	395,945	9,214	84%	334,630	7,988	59%
El-Fath	165,639	5,817	90%	160,725	6,251	89%	137,497	5,682	88%
Bank Office	14,451	195	100%	12,793	214	100%	11,638	145	100%
Total	2,466,727	83,666	95%	2,562,175	86,098	93%	2,352,031	75,211	86%

Source: PBDAC in Assiut Unit: 1,000 LE

The agricultural loan which is subsidized by the government is used by many small scale farmers. There is however, a lack of incentive for small scale farmers to cultivate new crops and improve productivity. There is another example of a commercial bank. A farmer in El Ghorayed Village has not borrowed the money from the PBDAC, but from the Alexandria Bank. He borrowed LE16,000 to establish a business as a trader. The repayment period was 7 years and the interest was 7%. This is because he has only 0.5 feddan so he could not borrow enough money from the PBDAC. He has, however, a stable income as an agricultural extension worker; thus, he could get access to loans provided by the Alexandria Bank. Of course it is difficult for most of the small scale farmers to access loans by either PBDAC or other commercial banks.

CHAPTER 3 PARTICIPATORY WORKSHOPS FOR SITUATION ANALYSIS AND RURAL SOCIETY

This chapter summarizes the processes and results of the workshops for the present situation analysis, particularly at the village level. The first stage is to select the "usual villages" and "potential villages" based on the situation analysis at the district level of each governorate. The second stage is the workshops at the usual village and the third stage is to select focused crops and implement workshops at the villages of focused crops. Details of the workshops are attached as APPENDIX 4.3. Also described a situation of rural society based on the rural community survey upon the results of the workshops.

3.1 Workshops at Governorate and District-level

Governorate and district level workshops were held twice each at both the Minia and Assiut governorates. The first workshops were held on 5 May 2010 in Minia and 10 May 2010 in Assiut, and the objectives were to (1) construct a situation analysis of each district by governorate and district officers, (2) classify districts according to the situation analysis, and (3) issue a problem analysis and prioritize issues according to the classification. Nine districts of the Minia governorate were grouped into northern, central and southern regions, and eleven districts of the Assiut governorate were grouped into northern, southwestern and eastern regions.

The second workshops were held on 13 May 2010 in Minia and 17 May 2010 in Assiut, and aimed to (1) prioritize agricultural strategies, on-going and pipeline projects, (2) find major success stories, and (3) find candidates for the "usual villages" and "potential villages" and present a rationale. One "usual village" per region was selected.

3.2 Selection of the Villages to Hold Workshops

The criteria for selecting a candidate for the "usual village" category are described by the participants as: (1) There are no projects currently found in the village; (2) the capacity of the village is weak; (3) farmers possess small holdings (ownership) in the village; (4) agricultural holding (ownership) is separated; (5) the village has little income and does not have any agricultural projects from before; (6) there is a lack of skilled labor; (7) it is a village which has the ability to absorb new ideas; (8) the unemployment rate is high, etc. Table 3.2.1 shows the regions classified and the villages selected at the workshop.

Table 3.2.1 Regions Classified and Villages Selected at the Workshop

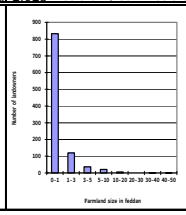
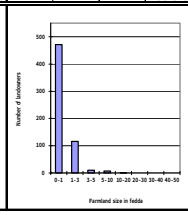
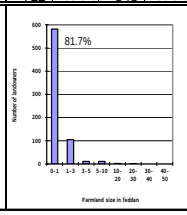
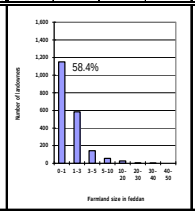
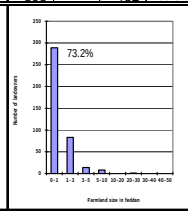
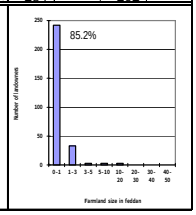
Governorte	Region	District	Usual Village for WS	Governorte	Region	District	Usual Village for WS
Minia	Northern	El Edwa		Assiut	Northern	Dayrut	
		Maghagha	Abad sharona			El-Kosya	El Ansar
		Beni Mazar				Man Floot	
	Central	Matai	Abo Haseeba			Assiut	
		Samallout			South Western	Abo Teag	
		El-Minia				Sadfa	Nazlet El Ablak
	Southern	Abo Korkus				El-Ghanayem	
		Mallawe	El Baragel		Estern	Abnoub	
		Dayr Muas				El-Fath	Manshyet El Maasra
						Sahel Selem	
						El-Badary	

3.3 Workshops at the Village Level

A series of village level participatory workshops were held at the "usual villages," representing six

regions of the Minia and Assiut governorates as in Table 3.3.1. Each workshop took two to three hours and there were two sessions. The first session was for participatory analysis by sub-groups using PRA/RRA tools such as the "history of the village," "trend analysis," "rich and poor profile," "calendars," and "resource mapping." Then the second session was for plenary problem analysis using the fact that "small scale farmers have little income" as the core problem. The number of participants was smallest with only 95 at the El Ansar village, the El Kosya district, and the Assiut governorate, and was largest with 386 at the Abad Sharona village, the Maghagha district, and the Minia governorate. The participants of El Ansar Village were skewed, especially for women, because there were only officers of village agricultural cooperatives and teachers at the beginning. Only a few ordinary villagers joined later. The representatives of the village gave us negative comments at the preparatory meeting for the necessity of female participation in the workshop.

Table 3.3.1 Village-level Participatory Workshops

Workshop Date		12-Jun-10				19-May-10				5-Jun-10				31-May-10				14-Jun-10				10-Jun-10			
Village		Abad Sharona				Abo Haseeba				El Baragel				El Ansar				Manshyet Al Maasra				Nazlet El Ablak			
Distirct		Maghagha				Matai				Mallawe				El-Kosya				El-Fath				Sadfa			
Governorate		Minia				Minia				Minia				Assiut				Assiut				Assiut			
Number of Participants (Male, Female, Children and **Total**)		220	110	56	**386**	63	65	30	**158**	78	34	48	**160**	75	20	0	**95**	34	40	30	**104**	37	25	38	**100**
Number of Participants Registered (Male, Female and **Total**)		128	41		**169**	42	50		**92**	68	25		**93**	39	14		**53**	21	23		**44**	43	31		**74**
Number of Landowners per Farmland Size	Feddan	Landowners		Farmland size		Landowners		Farmland size		Landowners		Farmland size		Landowners		Farmland size		Landowners		Farmland size		Landowners		Farmland size	
	0-1	832	81.7%	432.5	38.3%	471	77.9%	214.6	46.6%	582	81.7%	213	39.2%	1,151	58.4%	565	26.5%	289	73.2%	163	37.7%	242	85.2%	81	40.4%
	1-3	120	11.8%	225.0	19.9%	116	19.2%	146.8	31.9%	105	14.7%	170	31.3%	585	29.7%	615	28.9%	83	21.0%	141	32.6%	33	11.6%	53	26.1%
	3-5	36	3.5%	104.5	9.2%	10	1.7%	38.8	8.4%	11	1.5%	40	7.4%	144	7.3%	316	14.8%	14	3.5%	54	12.5%	3	1.1%	11	5.4%
	5-10	22	2.2%	160.4	14.2%	7	1.2%	49.0	10.6%	11	1.5%	73	13.4%	56	2.8%	245	11.5%	8	2.0%	52	12.0%	3	1.1%	17	8.3%
	10-20	6	0.6%	124.0	11.0%	1	0.2%	11.3	2.5%	2	0.3%	25	4.6%	28	1.4%	241	11.3%	0	0.0%	0	0.0%	3	1.1%	40	19.8%
	20-30	0	0.0%	0.0	0.0%	0	0.0%	0.0	0.0%	1	0.1%	22	4.1%	4	0.2%	80	3.8%	1	0.3%	22	5.1%	0	0.0%	0	0.0%
	30-40	1	0.1%	36.0	3.2%	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	2	0.1%	68	3.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	40-50	1	0.1%	48.0	4.2%	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Total	1,018	100.0%	1,130.4	100.0%	605	100.0%	460.4	100.0%	712	100.0%	543	100.0%	1,970	100.0%	2,130	100.0%	395	######	432	100.0%	284	######	202	######
	Number of Landowners																								

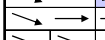
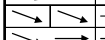
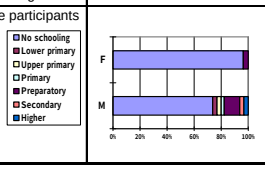
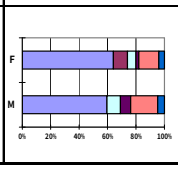
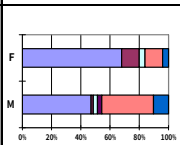
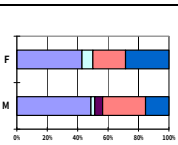
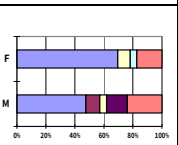
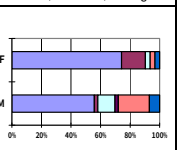
3.3.1 PRA/RRA

Table 3.3.2 shows the results of PRA/RRA at each "usual village". Regarding the trend analysis, education has gone down in the last five years only in the Nazlet El Ablak village, the Sadfa district, and the Assiut governorate. Income has gone down in the last five years in all the six "usual villages". Health has gone down for twenty years in Abad Sharona, Maghagha, and the Minia governorate.

Regarding the rich and poor profile, villagers think there is no middle class in the Manshyet El Maasra village, the El Fath district, the Assiut governorate, the Abad Sharona village, the Maghagha district, and the Minia governorate. The poor class accounts for 98% and 85%, respectively, and it suggests a gap between the rich and the poor.

Villagers, both men and women, had little schooling in the Abad Sharona village, the Maghagha district and the Minia governorate, and this indicates that poverty dominates. The schooling level of the participants of the El Ansar village, the El Kosya district and the Assiut governorate is unusually high, because not many ordinary villagers participated in the workshop.

Table 3.3.2 Major Results of PRA/RRA at "Usual Villages"

Workshop Date		12-Jun-10	19-May-10	5-Jun-10	31-May-10	14-Jun-10	10-Jun-10
Village		Abad Sharona	Abo Haseeba	El Baragel	El Ansar	Manshyet El Maasra	Nazlet El Ablak
Distirct		Maghagha	Matai	Mallawe	El-Kosya	El-Fath	Sadfa
Governorate		Minia	Minia	Minia	Assiut	Assiut	Assiut
History		(1) End of the poliomyelitis diseased in the village. (2) Establishment of Trad el Nile which protects the land from flood. (3) Spread of cow diseases which kill a lot of livestock.	(1) There was a revolution in 1919 and the village resisted the feudal system. (2) After the revolution, about 200 feddan was divided into 76 persons by the law of agriculture reformation. (3) Electricity and piped water entered the village in 1979.	(1) The hardest years are from 1993 to 1999. (2) The best year was 1982 when electric came to the village. (3) Piped water became available in the village in 1975.	(1) Established 1700 years ago. (2) Cholera was spread and a lot of children and old people died in 1945. (3) The first primary school was constructed in 1946. (4) Drainage cannal was constructed in 1964. (5) Electricity came in 1976. (6) Village health unit was established in 1978.	(1) Established in 1800. (2) Electricity came in 1979. (3) Piped water came in 1985. (4) Broad bean crops were damaged by some disease in 1990.	(1) Established in 1800. (2) Large number of villagers were killed by disease (Cholera?) in 1944. (3) Cultivation of cotton increased and electricity came in1980. (4) Piped water came in 1987.
Trend Analysis	Time period	15-20 yrs ago / 10-15 yrs ago / 5-10 yrs ago / 0-5 yrs ago	15-20 yrs ago / 10-15 yrs ago / 5-10 yrs ago / 0-5 yrs ago	15-20 yrs ago / 10-15 yrs ago / 5-10 yrs ago / 0-5 yrs ago	15-20 yrs ago / 10-15 yrs ago / 5-10 yrs ago / 0-5 yrs ago	15-20 yrs ago / 10-15 yrs ago / 5-10 yrs ago / 0-5 yrs ago	15-20 yrs ago / 10-15 yrs ago / 5-10 yrs ago / 0-5 yrs ago
	Education				N.A.		
	Health						
	Income						
	Electricity						
	Climate						
Rich and Poor Profile		12 families with 20 feddan, 2 cars, 2 tractors, 5 water buffaros, 10 cows. 2-5 feddans, 5 cows, water buffaros, house, donkey and some goats. No jobs, 5 karat (5/24 feddan) or no land. *(Poor: 85%, Middle: 10% and Rich: 5%)*	More than 10 feddan, more than 6 cattle, tractor, pumps and car. Less than 5 feddan, 3 cattle and a pump. No land and no cattle. *(Poor: 60%, Middle: 30% and Rich: 10%)*	10-15 feddan, 4-6 cattle, 1 tractor, 1 or 2 pumps and 1 car or track. Less than 1 feddan, 1-2 cattle and 1 pump. 1-5 karat, no cattle, no pump. *(Poor: 60%, Middle: 30% and Rich: 10%)*	> 10 feddan, > 10 cattle, 1 tractor, 1 pump, fruits gardin and poultry house. Less than 5 feddan, less than 3 cattle and a pump. No land with daily wage. *(Poor: 70%, Middle: 25% and Rich: 5%)*	> 5 feddan, > 4-5 cattle, 1-2 tractor. *(Poor: 98%, Middle: 0% and Rich 2%)*	> 5 feddan, > 3 cattle and 1pump. < 3 feddan and 1-2 cattle. Not more than 1/2 feddan (12 karat). *(Poor: 80%, Middle: 15% and Rich: 5%)*
Pair-wise Ranking		1. Wheat, 2. Marjoram, 3. Barseem, 4. Maize, 5. Soybean	1. Wheat, 2. Maize, 3. Barseem, 4. Potatos, 5 Sweet potatos	1. Wheat, 2. Sugarcane, 3. Maize, 4. Barseem	1. Wheat, 2. Maize, 3. Barseem	N.A.	1. Wheat, 2. Maize, 3 Sorghum
Schooling level of the participants							

3.3.2 Problem Analysis

"There are no job opportunities" gets the highest priority, and then "farmland size is small" at village level workshops. The incidence of "small scale farmers cannot sell at good price" is not high, and that is because most of the participants are landless. Female participants spoke up also, and one male participant even complained "only women are talking, and the voice of men is not reflected." From the problem trees of the six "usual villages," an integrated problem tree was formulated. It is like the least common multiple, and the integrated tree contains all the problems mentioned in the six problem trees.

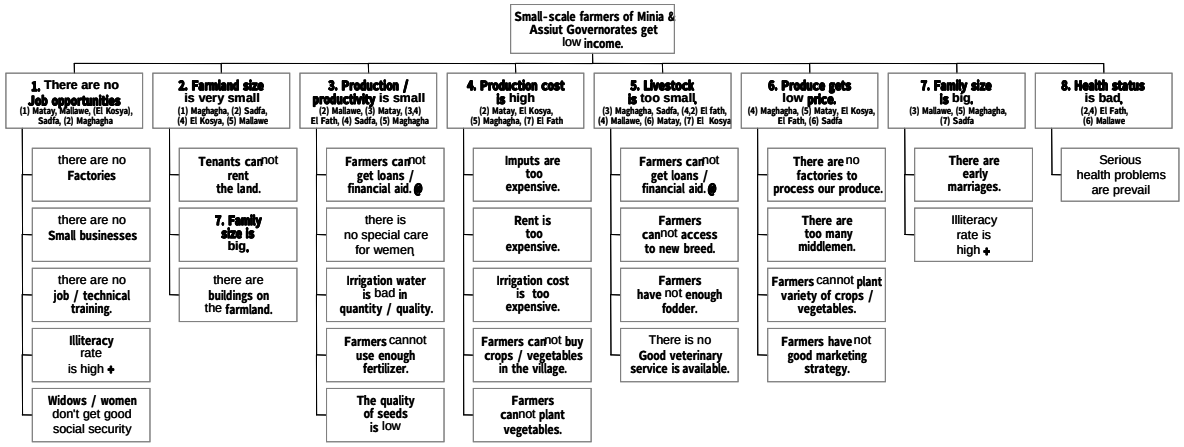


Figure 3.3.1 An Integrated Problem Tree Made from the Six Problem Trees

3.4 Problem Analysis of the Focused Crops

Based on the survey of potential villages and the sector survey, the study team held meetings with the governorate and district officers in each governorate and chose garlic, potato and onion in Minia and tomato, basil and pomegranate in Assiut as the focused crops. Then the team requested the governorates to select the major "potential villages," which are the centers of production, and to assemble about 20 stakeholders, including farmers and traders, through village agricultural cooperatives to have participatory workshops. The participants ranged from 9 at the potato village of El Borgaya in Minia to 25 at the pomegranate village of El Egal El Bahry in Assiut. The reason why we could not have so many participants at El Borgaya could be because the agricultural cooperative has not played a major role in potato production and its promotion.

Table 3.4.1 Villages of Focused Crops

Governorate	Focus Crop	District	Village
Minia	Garlic	El Edwa	Salakos
	Potato	El Minia	El Borgaya
	Onion	Dayr Muas	Delga
Assiut	Tomato	Man Floot	El Hawatka
	Basil	Abnoub	Arab El Kadadeh
	Pomegranate	El-Badary	El Egal El Bahry

Figure 3.4.1 shows the common problem analysis of the six principal crops. According to the stages of value chain, the priority issues are in the input stage for garlic and tomato, in the production stage for onion and pomegranate; and in the sales and marketing stage for potato and basil.

Table 3.4.2 Summary of Problem Analysis (Focused Crops)

Focused Crop	Priority issues at problem analysis of the villagers of the focused crops			
	Input	Production	Post-harvest	Sales /Marketing
Garlic	irrigation costs	shortage of growing information and pesticides	need to keep green and no cold storage	the small amount of purchase by exporters
Potato	The price of seeds	shortage of water, the quality of imported seeds and pesticides	-	no exports
Onion	The price of pesticides	the quality of seeds, the temperature (too low in January and too high in August)	much loss	no exports
Tomato	The price of pesticides	The quality of seedlings	much loss and no processing	too much product at the same time
Pomegranate	The price of pesticides	Frequent pests	no cold storage and no processing	no processing and control by the companies
Basil	The price of fertilizer	no promotion policy by the government	loss through drying	no information on international prices

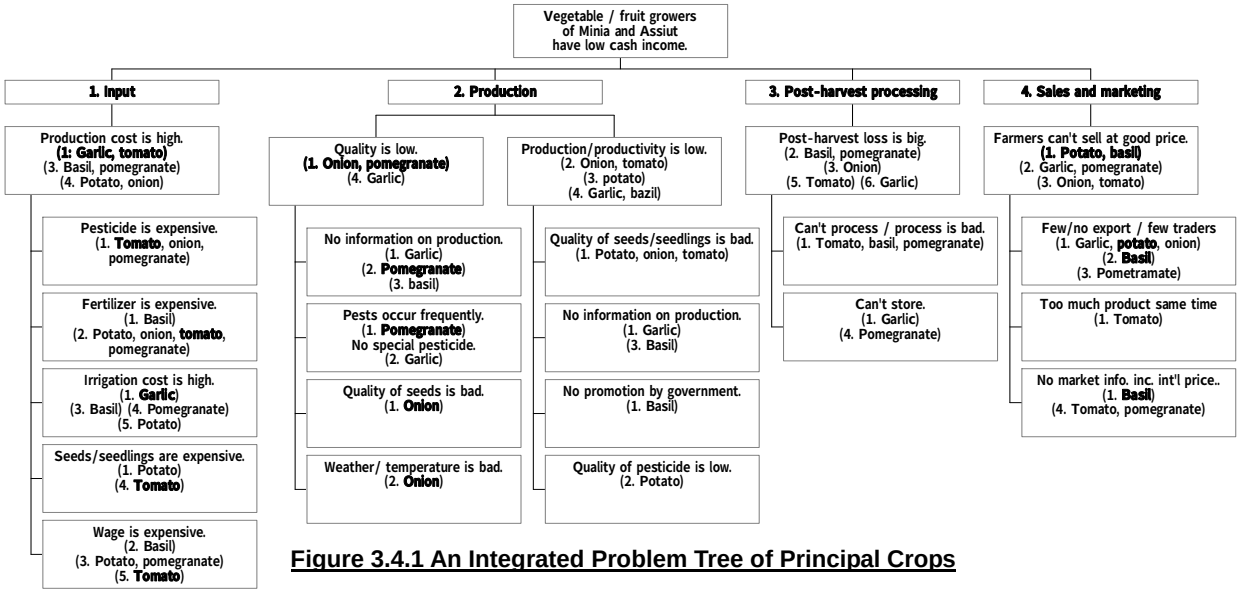


Figure 3.4.1 An Integrated Problem Tree of Principal Crops

3.5 Rural Society

3.5.1 Female Heads of Household and Women in General

During the workshops at the "Usual Villages," especially at Abad Sharona village, Maghagha District, Minia Governorate, Abo Haseeba village, Matay District, Manshyet El Maasra village, El Fath District, and Assiut Governorate, the voices of women were significant. For example, during the problem analysis stage at Abo Haseeba village, a remark of "especially for widows and women" was added to the "number one direct cause" of "there are no job opportunities." At Manshyet El Maasra village, women prioritized differently. They ranked "we cannot sell livestock" number two and "we cannot work" at number three, whereas men ranked the former number three and the latter number two. Women, especially female heads of the households, are facing a serious crisis of income generation. Female family members of farmers or renters can help to cultivate a farm, but it is practically impossible to work on a farm if they are landless. The only income sources could be raising small livestock, running micro businesses and doing manual work such as rope making, as in the El Baragel village, Mallawe District, and Minia Governorate.

No statistics are available on female-headed households, but they are more than 30% of the heads in the list of participants at Abo Haseeba village, Matay District, Minia Governorate and at Nazlet El Ablak village, Sadfa District, and Assiut Governorate. The ratio is only 5.1% of the heads of households at El Ansar village, El Kosya District, and Assiut Governorate, but this is because only a few ordinary villagers participated in the workshop. According to the hearing of the Village Agricultural Cooperative of Abad Sharona, there are about 300 widows and elder women who are getting social security of 80 L.E, and which is about 20% of the households if the population is 10,000 with 1,500 households. It must be noted that at least some female heads are not widows. There are women who are divorced or separated getting support from their brothers or parents.

Table 3.5.1 The Ratio of Female Headed Households

Workshop Date	12-Jun-10			19-May-10			5-Jun-10			31-May-10			10-Jun-10			14-Jun-10		
Village	Abad Sharona			Abo Haseeba			El Baragel			El Ansar			Naslet El Ablak			Manshyet El Maasra		
Distirct	Maghagha			Matay			Mallawe			El Kosya			Sadfa			El Fath		
Region	Northern			Central			Southern			Northern			Southwestern			Eastern		
Governorate	Minia			Minia			Minia			Assiut			Assiut			Assiut		
Population	10,000			5,000			6,000			14,000			3,000			4,000		
Number of Heads of Household Registered (Male, Female and **Total**)	123	30	**153**	40	19	**59**	59	14	**73**	37	2	**39**	34	19	**53**	19	6	**25**
	80.4%	**19.6%**	**100.0%**	**67.8%**	**32.2%**	**100.0%**	**80.8%**	**19.2%**	**100.0%**	**94.9%**	**5.1%**	**100.0%**	**64.2%**	**35.8%**	**100.0%**	**76.0%**	**24.0%**	**100.0%**

3.5.2 Minimum Cash Expenditure and Working Away

The study team has started fixed point interviews with about two micro farming households of each "Usual Village." The income and expenditure depend whether they own at least some land or not. Roughly speaking, villagers can produce enough maize in summer and wheat in winter for a family of six or seven and even sell a little if they own 12 karat, 1/2 feddan or 0.21ha. By the common sense of farmers, they can expect to produce 2.1 ton of maize per feddan and 1.5 ton of wheat per feddan. Their cash expenditure could be as small as 200 L.E. per month in that case.

Landless laborers, however, may need to buy two ardab of wheat (2 x 150kg for 500 L.E.) and two ardab of maize (2 x 140kg for 300 L.E.) apart from government bread of 20 pieces per day for 1 L.E so that they need additional 800 L.E. per year or 65 L.E. per month. Despite this, a female-headed household of three was found to live with as little as 115 L.E. per month. If their sons work in Cairo for 1.5 months and spend 10 days in the village, or they can earn 2 or 3 L.E. by making 100 m of rope

from palm tree in 5 hours, they might be able to spend 1,200 L.E. per year or 100 L.E. per month for three ardab of wheat and three ardab of maize. We also found that seven households out of fourteen, with whom we are doing fixed-point interviews, have at least one family member working in Cairo or in other Arab countries.

Food costs are especially expensive for meat, which is 45 L.E. to 48 L.E. per kg, so poor families can have a little bit of meat only once a month, whereas some families can afford to buy meat every market day. Some landless laborers spend only 1 L.E. or less per day for vegetables, where some families spend more than 5 L.E. per day.

They can make something like 500 or 600 L.E. per month if they work in Cairo. It was interesting to find a head of household who quit working in Cairo from June this year. He found a 200 L.E. job at a government bakery by working 4 AM to 9 AM every day. He is landless, but his father owns 1 feddan that he and his brothers are cultivating together. If someone has a farm for self consumption, 200 L.E. per month of cash income is attractive enough.

The farmers, including female-headed households of El Bragel village, the Mallawe district, and Minia Governorate, seem to have enough to spare, because they can make money from rope making. It is only 2 or 3 L.E. for 5 hours, but women and children can work, too, so that double or triple income is also possible.

One of the success stories of income generation by women in Minia Governorate tells us that the income is 7 L.E. per day or 210 L.E. per month for selling tameya, deep fried broad beans, in the morning and in the evening every day.

From the above, opportunities for generating 200 L.E. per month constantly might be able to double the cash expenditure of landless farmers.

3.5.3 Schooling Level

The literacy level of adult women seems to be quite low at Abad Sharona village, Maghagha District, Minia Governorate and at Nazlet El Ablak village, Sadfa District, and Assiut Governorate, so girls of primary or preparatory schools were presenting the results of sub-group work of women. These might be extreme cases, but fully 70% of adult women (out of 184 workshop participants) and about a half of adult men (out of 341 workshop participants) in the 6 villages did not have any schooling.

From the interviews, on the other hand, young men increasingly attend high school, so that many of them hold industrial, agricultural or trade Diplomas. About 20% of men graduated from high school, except in Abad Sharona village, according to the list of participants. At one of the interviewee households in Nazlet El Ablak village, two sons graduated from university and another two sons graduated from high school, and all of them got a salary where their parents did not attend school at all. 60% of the farmland is owned by outsiders and 3/4 of the landowners live outside of the village, because it is said that many villagers gave up living on agriculture, sold their farmland and spent the money on education. This is probably because the Nazlet El Ablak village is close to Assiut City, and their farmland is rather small from the beginning, yet it also could be one of the future models of the “Usual Villages.”

Figure 3.5.1 shows the age distribution and education level of the interviewed female trainees / workers of the 3 Pilot Project sites of Promoting Post-harvest Improvement and Processing.

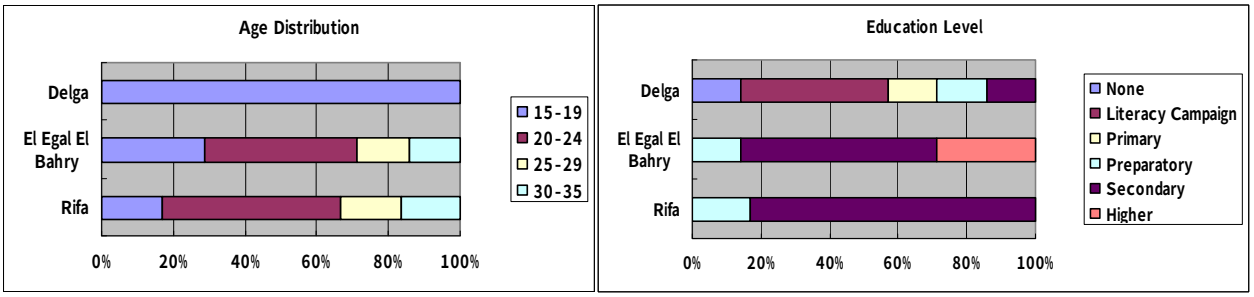


Figure 3.5.1 Age Distribution and Education Level of the Female Trainees / Workers

Although the female trainees / workers are much younger at Delga in Minia Governorate, less than a half went to school, while all of them went to either preparatory or secondary school in El Egal El Bahry and Rifa in Assiut Governorate. Less than half of them have been to Cairo, and also less than half of them have been to Minia in Delga. Delga is better in job opportunities because of onion production and pickles production however. Some of the female trainees / workers of Refa had jobs in Assiut because Refa is close to Assiut. On the other hand, nobody has earned money before in El Egal El Bahry because there are few job opportunities there. Two of them have had higher education, three graduated secondary school and one finished preparatory school, but cannot find job.

3.5.4 Village Structure and Agricultural Cooperative

Egyptians from old times live in the villages in Old Land and they have settled along the Nile mainly from South to North. Villagers can trace up to the founder of the village (the founder of the major eela) if the history of the village is something like one hundred and several decades and not so long. For example Abo Haseeba Village of Minia Governorate was founded by the people who were relocated by the construction of Aswan Low Dam which was completed in 1901. Other villages in Minia Governorate were founded by the people from Assuit Governorate and also from the southern villages of the Governorate.

On the other hand, the Arabs live in the villages in New Land are people from Libya, Morocco, Saudi Arabia, Syria, Turkey, Iraq etc. and they mainly settled along the Nile from north to south. Kabera, which is a larger unit like a tribe than eela, is used. The name of the founder, who usually is the father of the people who left their country and immigrated to Upper Egypt, is used for the name of each kabera. The major kabera of the village I visited are El Gamala, El Gawaz, El Fergam etc. and they settled here a little less than 100 years ago when Omar Mukhtar was fighting against Italian occupation. There are same kabera in each governorate and each district along the Nile because brothers settled from north to south one by one.

There are village heads in the villages except Delga Village of Minia Governorate where district police exists. There usually is a chief eela of the village and there are no elections because the village head is succeeded from father to son in principle. There was an election in Arab El Kadadeh Village of Assuit Governorate, but the candidates were cousins from the same eela. Some leaders said, however, that the village head will not be succeeded like that anymore after the revolution and there will be elections.

There are several, maybe up to ten, assistants / elders for the village head and they are formally appointed by the district police. In case of Abad Sharona Village or El Tyba Village of Minia Governorate, agricultural cooperative head, chairman or a board member often becomes one of the assistants.

The forms of agricultural cooperatives look different between the villages under traditional agriculture and the villages where they grow many cash crops and middlemen / traders have big power. The leader of each major eela becomes one of the board members in principle, and there is no vote or a vote only to approve the candidates. If you check the eela of each board member belongs, you will find that there is a perfect balance in terms of eela in the village.

At Salokos Village, El Borgaya Village and Delga Village of Minia Governorate I visited in April, the board members only work for signing of official papers or mediation of conflicts and there have been no or few regular meetings of board members. These villages are famous for garlic, potato or onion and the board members are rather middlemen / traders and landowners than farmers. They are not interested in distribution of fertilizer or pesticide, which still is a major role of agricultural cooperatives, or even cultivation itself. They are very busy in personal interests too. The question is the agricultural cooperatives keep centering on cultivation or shift to processing and marketing. The board members need to represent the interests of the members of the agricultural cooperatives anyway. Other interesting cases are El Ansar Village of Assiut Governorate where presence of anybody from every major eela is more important than the presence of the Chairman or several board members.

CHAPTER 4 KEY ISSUES: CONSTRAINTS AND POTENTIALS

4.1 Small Scale Farmers

4.1.1 Majority of Land Holdings

According to statistics from 2005, the share of small scale land-owning farmers with less than three feddan (1.26ha) of arable land reaches 86.6% in Minia Governorate and 89.2% in Assiut Governorate. Among them the majority of small scale land-owning farmers have less than one feddan (0.42ha). The land holders with less than one feddan in Minia and Assiut comprise 60.7% and 76.9% respectively. Average land size of land owners with less than one feddan is 0.36 feddan in Minia and 0.23 feddan in Assiut. Though we define small scale farmers as those with less than three feddan, we should recognize the actual size of land holdings as the most of the farmers have less than one feddan. Even the majority holds less than 0.5 feddan on average.

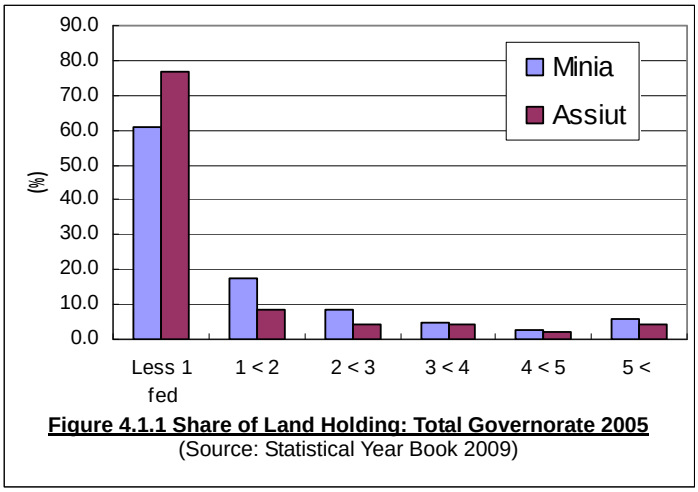


Figure 4.1.1 Share of Land Holding: Total Governorate 2005
(Source: Statistical Year Book 2009)

There are no statistics regarding landless farmers or laborers, but estimates are about 20% of farmers in Upper Egypt. Data on the number of agricultural cooperative members in all the 342 villages in Minia is available. According to the data, total number of the village agricultural cooperative is 284,579 (households). The total rural households in Minia in 2006 Census counts 727,530 households. Hence the share of the village cooperative members is only 39% of the rural households. The cooperative member must be basically the landowner, but there are absent landowners. Also the factors that there are landowners who were not registered to the cooperative, the rural population includes rather urban population, the villages around the city have become so called urban village and also large village has been urbanized. These factors must be taken into consideration, but the data may indicate that the estimated landless farmers are close to the real picture or there could be more landless.

The Study Team obtained the land holding data registered to the village cooperative in 12 villages (six each in Minia and Assiut). The six villages are typical of the region, and were selected to represent the general situation of villages in the project area. The rest were considered villages with significant specialty crops. Table 4.1.1 below shows the distribution of farm land owners by size. The four villages with little vegetable cultivation (typical village) show the tendency for higher shares of smaller land holding than the share of land owners with less than one feddan. Land owners with less than one feddan number as high as from 76% to 84%, while invillages closer to the desert, including the new land (Arab El Kadadeh and Delga village), the size of land holding is relatively large. The data suggests that in the villages in the old land most of the farmers own less than one feddan and may be responsible for the stagnancy of the prevailing vegetable crop.

Table 4.1.1 Land Holdings of 12 Villages in Minia and Assiut

Governorate	Village		Share of Household (%)			Ave. Size (fed)		Remark
	Name	Crops	< 1 fed	1 < 3 fed	3 fed-	< 1 fed	1 < 3 fed	
Assiut	Nazlet EL Ablak	Little vegetables	84.1	12.4	3.5	0.35	1.54	defined as usual village
Minia	EL Baragel	Little vegetables	80.1	15.8	4.1	0.36	1.63	defined as usual village
Minia	Abo Haseeba	Little vegetables	77.1	18.7	4.2	0.37	1.58	defined as usual village
Assiut	Manshyet El Maasra	Little vegetables	75.5	21.6	2.9	0.42	1.54	defined as usual village
Minia	El Borgaya	Potato	72.5	18.4	9.1	0.37	1.55	
Minia	Abad Sharona	Marjorum	72.2	20.3	7.5	0.42	1.63	defined as usual village
Assiut	El Egal EL Bahry	Pomegranate	69.9	23.0	7.1	0.42	1.63	
Minia	Salakos	Garlic	67.7	25.0	7.3	0.43	1.52	
Assiut	El Ansar	Tomato	59.6	30.8	9.6	0.50	1.55	defined as usual village
Assiut	El Hawatkha	Tomato seedling	58.9	32.0	9.1	0.49	1.68	
Assiut	Arab El Kadadeh	Basil	33.9	47.0	19.1	0.53	1.66	includes new land
Minia	Delga	Onion	33.1	37.6	29.2	0.52	1.72	includes new land

Source: Village Cooperatives (Land Registration Book)

The land registration data of the village cooperative provided information for the breakdown of land holdings of less than one feddan. Figures 4.1.2 and 4.1.3 show the distribution of land owners with less than one feddan in the unit of karat (1 karat = 1/24 feddan) in the total six villages all in Minia and Assiut. The mode of distribution in the villages of both governorates is from 6-8 karat (0.25 – 0.33fed) and the share of land owners with less than 12 karat (0.5 feddan) is 59% in Minia and 57% in Assiut. Most of the small-scale farmers are cultivating traditional crops such as maize, wheat and berseem and do not grow profitable horticulture crop very much. They also first allocate the produce for their consumption and then sell the surplus[5].

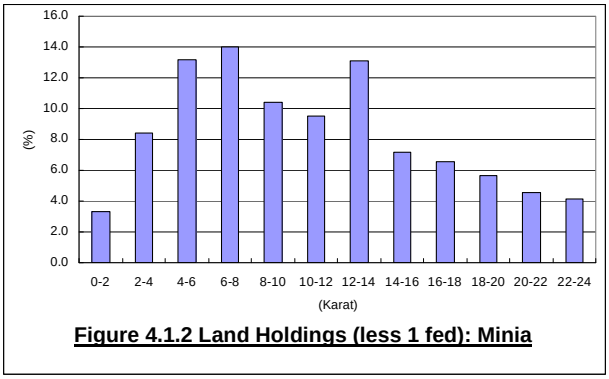


Figure 4.1.2 Land Holdings (less 1 fed): Minia

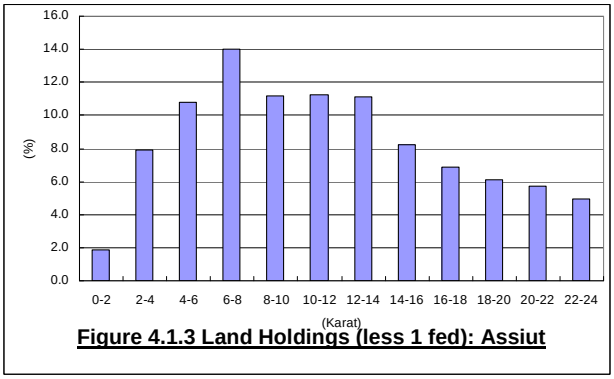


Figure 4.1.3 Land Holdings (less 1 fed): Assiut

On the other hand, there are farmers who are cultivating commercial crops although their cultivated land is very small. In El Egal El Bahry village, the number of farmers cultivating pomegranate was available. Table 4.1.2 shows the number of pomegranate farmers by land holding size. The share of pomegranate farmers with less than 0.5 feddan accounts for 38% of the total pomegranate farmers and 12% of the total amount of land owners with less than 0.5 feddan. It indicates that farmers would choose to go into cash crop cultivation instead of cultivating traditional crops based on economic benefit.

Table 4.1.2 Land Holdings of Pomegranate Farmers in El Egal El Bahry Village (El Badary District, Assiut Governorate) in 2010

Land Size (fed)	Pomegranate Farmer		Total Farm Household		(1) / (2)
	(1) No.	Share (%)	(2) No.	Share (%)	(%)
< 0.5	107	37.8	872	46.0	12.3
0.5 < 1	91	32.2	454	23.9	20.0
1 < 3	74	26.1	436	23.0	17.0
3 < 5	7	2.5	97	5.1	7.2
5 <	4	1.4	37	2.0	10.8
Total	283	100.0	1,896	100.0	14.9

Source: Village Cooperative (El Egal El Bahry)

[5] Annual per capita consumption of maize and wheat are estimated at 116 kg / person and 175 kg / person, respectively ("Egypt An Economic Geography" by Ibrahim, 2003). In case of a standard family with 5 members, 580 kg of maize and 875 kg of wheat are required annually. To produce them, 0.32 feddan for wheat and 0.17 feddan for maize are required. It means about 0.3 feddan of farmland is required for self-sufficient. As fodder crop like berseem is crucial for farmers to maintain the land fertility and animal feed, it is estimated that at least 0.5 - 0.6 feddan is required to maintain the cropping system with animals.

4.1.2 Cultivation Area According to Land Holding

In the interviews at the "standard villages", micro scale farming households / renters say they are invested in producing crops and cannot afford to process vegetables. One landholder with one feddan says he can grow vegetables, but only for home consumption and a small amount for sale in the village, not enough for sale outside of the village.

Figure 4.1.4 shows the comparison of crop cultivation area and horticulture cultivation area of Naslet El Ablak Village, Sadfa District, and Assiut Governorate. Although vegetables and fruit trees cannot be differentiated, this displays the tendency toward horticulture cultivation when the farming land is larger. Horticulture occupies about 40% of the farming land if the land size is more than 16 karat, but less than 20% if the land size is less than 16 karat. As a result, the majority of vegetables sold in the village come from the town.

Another finding from the interviews with focused crop growers is that they grow root vegetables in the broad sense such as garlic, potato and onion in very small lands too. It is difficult to grow a variety of garden products especially green vegetables beyond self-sufficiency and sale in the neighborhood if the land size is three karat or less. It is possible, however, to grow one kind of root vegetable as a cash crop in very small lands if the farmers can harvest at once and can store the produce for a while. In such a case, information from neighbors and success stories seem to play an influential role.

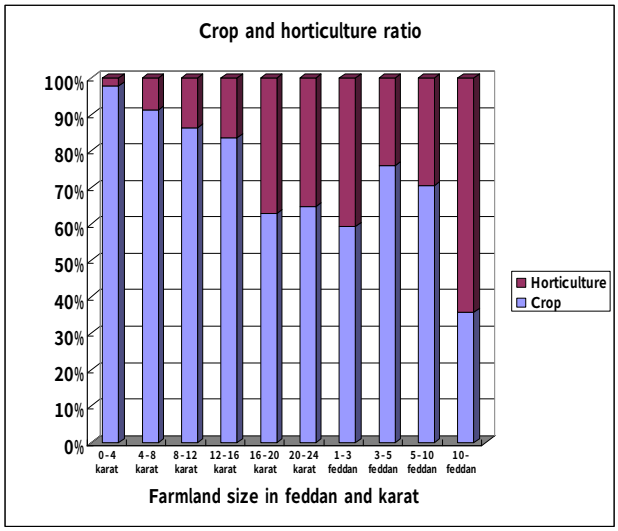


Figure 4.1.4 Cultivated area of Crops and Horticultural Crops (Nazlet El Ablak village in Assiut)

If that is the recognition of the farmers, it is necessary to introduce a root vegetable in the broad sense collectively, and to demonstrate the feasibility of cultivating vegetables in small land using green houses and other technology.

4.2 Agricultural Marketing

4.2.1 Demand Side (Private Companies, Middlemen and Consumers)

(1) Opinions of consumers

The study team carried out a questionnaire survey to the ordinary consumers in Cairo, Minia and Assiut cities. The counterparts distributed a questionnaire on purchasing vegetables and fruits to their neighbors. The numbers of collected answers in Cairo, Minia city and Assiut city were 16, 76 and 49, respectively.

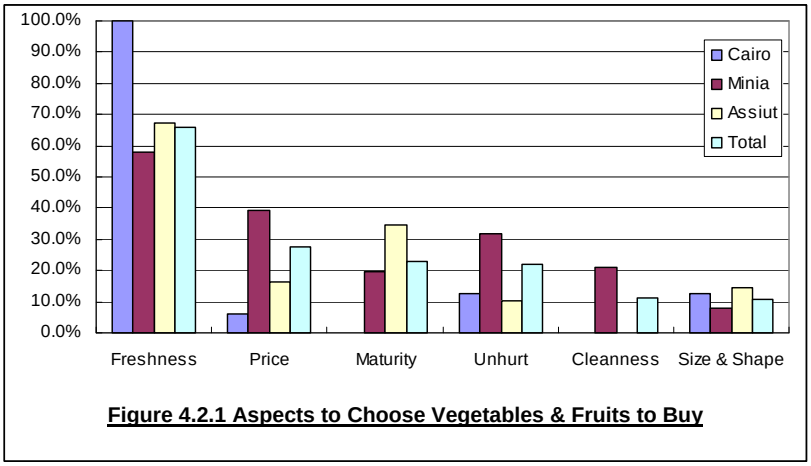


Figure 4.2.1 Aspects to Choose Vegetables & Fruits to Buy

Following are the results of the survey:

1) Aspects to Buy Vegetables and Fruits:

The consumers were asked which aspects they care about when choosing vegetables and fruits to buy. The most frequent answer was freshness of the products, as 66% of the consumers did not forget to mention this. Especially all the consumers in Cairo mentioned the freshness as important for buying products. The second aspect was price, as 28% of the consumers mentioned it. Consumers in Cairo are less careful about price compared to Minia and Assiut. The importance of freshness is signified from the gap between the first and second. The third aspect cared about by the consumers was the maturity of products, followed by unhurt products, cleanness and size and shape.

2) Mostly used market:

In all the cities, the consumers answered that more than 90% of the consumers buy vegetables and fruits mostly from local markets. There were a few who answered that they mostly buy them from supermarkets and delivery stores in Assiut city. As found in the points that the consumers care about, the local market is considered a good market to be able to get fresh products at a fairly cheaper price. A consumer pointed out that the fast cycle of selling vegetables and fruits at local markets keep the products fresh, while the ones in the supermarkets are kept longer at the shop, thus losing freshness. The questionnaire indicated that the environment of the local market is not always satisfactory with the consumers, as the markets are crowded, dirty, etc. However, the consumers can easily choose better quality products by themselves from the heaps of products.

3) About Packaging:

On a question which asked whether consumers prefer to buy either packaged products or products without packaging, there was not a big gap in preferences between packaged products or not. One issue is that there are not many packaged vegetables and fruits in Minia and Assiut cities, but they still have opinions on the subject. Those who prefer to buy vegetables and fruits without packaging say that it is easy to choose the products by themselves without packaging. Also they point out the high price with packaging. Some consumers also say that the packaged produce loses freshness, as they are not sold easily. On the other hand, the consumers see the good point about packaging, as it keeps products clean.

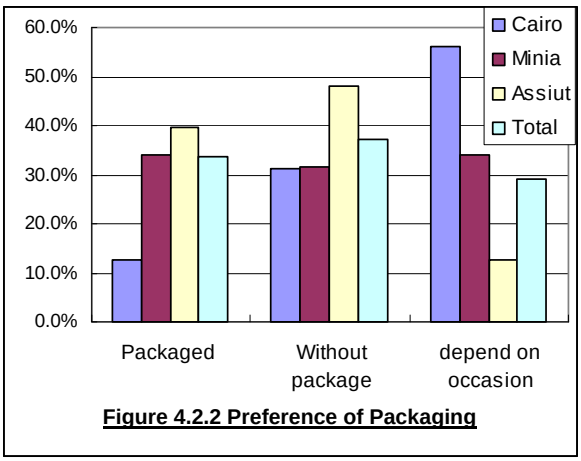


Figure 4.2.2 Preference of Packaging

4) About Organic Products:

Regarding marketing of agricultural products, farmers have to produce crops with differential advantages except crops of government controlled quota system; wheat, sugar cane, sugar beet and cotton, after liberalization of agricultural marketing since 1990s. The advantages can be defined as forwarding during shortage of supply in market, keeping freshness/ prolonging shelf lives, enlarging/ grading larger sizes and supplying in cheaper prices with low cost production. However, the tastes of crops are not generally reflected on pricing in local transactions. Demands of organic agro-products

have increased only for high-end consumers in Cairo, while conscious on food safety has not been penetrated to local urban inhabitants.

The majority of farmers worry marketing of organically products purchasing at higher prices with understanding safe food by local consumers. Prior to harvest of products, the marketplace should be established such as "Clean Vegetable Market" or cooperate with supermarkets in Minia and Assiut Cities. The propaganda of safe food might be one of important role for MALR.

As for organic products, the consumers may have interest in the organic products, but they cannot find them easily at the market. Also, high prices are still an obstacle for consumers to buy organic products. As observed at supermarket or organic outlets, the freshness of the products are apt to deteriorate as there are still too few consumers, and the products have been kept for long times in the shop. In Minia and Assiut, organic products are even not known to some consumers. The domestic market for organic products is not yet developed, but could have potential in future as people start caring more about healthy foods. In Egypt as an organization called Egyptian Center of Organic Agriculture (ECOA) has been established to certify the organic produce, efforts for organic farming has been prevailed.

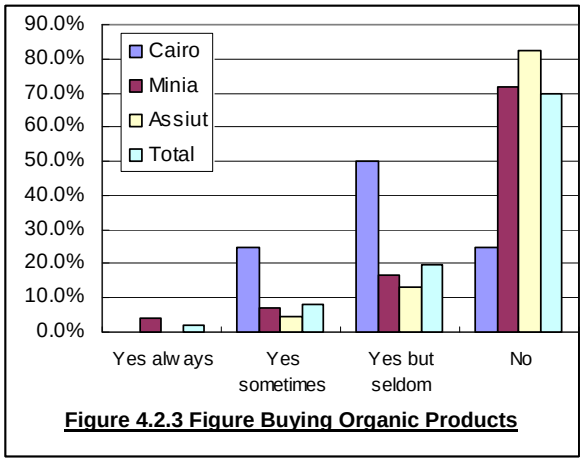


Figure 4.2.3 Figure Buying Organic Products

(2) Large Scale Vegetable Companies

The study team visited a few large-scale vegetable companies in Cairo to investigate their needs. These companies are found to care most about the safety of food, which includes interest in organic products. While the middlemen think about quantity and price, these companies, especially export companies, have the most interest in traceability of the products. For this reason, the companies are managing their own farmlands to practice organic farming, albeit the share of the production in the whole company is minor. Then their concern is connected to secure a stable supply of products. Their procurement of products therefore depends on the local traders and wholesale market, where the traceability becomes less expected.

These companies have a high interest in making contract farming with small scale farmers, provided that they are well organized. As long as the traceability is expected, there is a possibility that farmers' organizations would be able to access and tap into the demand of these large-scale companies.

4.2.2 Issues on Marketing Process

The following is an analysis of agricultural marketing in the two project governorates.

(1) Poor attention to post-harvest during transactions

The tomato is devalued since it is distributed with *Kafas*, wooden baskets, and piling up *Kafs*, inside which the tomato is squeezed. Vegetables are likely to lose their freshness for a short time by exposure to extreme temperatures which can cause drying. In addition, there are no cold storage facilities for onion and garlic sogermination is one of the main causes for their deterioration.

Regarding seed potatoes, middlemen and traders use cold storages owned by specialized cooperatives in Minia. Also, many impurities mix with herbs and medical herbs when they are dried. Storage loss for wheat is a big problem, as well. The governmental milling factory in Assiut stores 7,200 tons in silo storage, whereas the milling factory in Minia does not have silo storage. Instead of specialized cooperatives, BDACs keep the wheat production for 3-4 months in flatland while farmers ship their production to the milling factories. Wheat production is severely devalued by temperature and drying because BDACs do not have adequate warehouse facilities.

(2) Multiplicity of traders without value addition

Middlemen play the important role of distribution in the system since the agricultural distribution liberalized in the 1980s. Particularly, transactions for fruit and vegetables are run efficiently, and auctions for these crops are conducted traditionally. Fruit and vegetable producers agree with middlemen about the unit price before seeding and harvesting. The middleman takes all the amount of production, and they categorize the products by quality. The advantage of this transaction for farmers is to receive payment in advance for seeds and fertilizers, and selling price is based on the agreement. However, prices for tomatoes and cucumbers which are two of the most demanded vegetables are five times higher than lowest.

Middlemen sometimes do not buy all the production when harvest season coincides with lowest price period. The following table shows price difference of tomatoes at each transaction stage. Middlemen do not deal with farmers when the price is cheap, but the price rises at some point so farmers still have the motivation to produce tomatoes. The problem is that the period of price rising is unpredictable. Also, the tomato is a perishable crop so farmers want to sell processed tomato when the price is low.

Table 4.2.1 Tomato Prices at Transaction Stages

Level	Highest Price (LE/kg)	Lowest Price (LE/kg)
Farmers	1.50-1.75	Self consumption, animal feed, disregard
First middleman	2.00-2.25	Reject to deal
Wholesalers	2.50	0.50
Second middleman	3.00-3.50	0.75-1.00
Retailers and Retail Shops	5.00-6.00	1.00-1.25

Administration of Horticulture and Agricultural Crops in Assiut, August 2010

Distribution starts from first middlemen to local wholesalers, and then wholesalers deal with second middlemen, and finally, second middlemen deal with retailers and consumers. There are usually four levels in the distribution system, and transaction margins at each level contribute to low profits for farmers. The distribution is efficient at some point. For example, the lowest transaction unit is the same as the capacity of pick up tracks which amounts to about 1-1.5 tons. Traders deal with each other for long terms so their relationships are strong. From this point of view, it is difficult for farmers to implement marketing themselves for urban markets.

In marketing of agricultural produce, the gap between farm-gate price and consumer price is an indicator for efficiency of marketing system of the produce. The bigger the gap between the prices is, the less the share of farmers from consumer payments. “Sustainable Agriculture Development Strategy 2030” also addresses this issue that the share of the producers from the consumer prices is modest and marketers such as traders and brokers are getting higher share.

Table 4.2.2 shows the shares of farmers and marketers from consumer price in the country. Data obtained is for Assiut in 2009 and National level in 2007. For vegetables, shares of farmer in most of the vegetables are from around 20% to 40%. As the share of payment for Assiut is within the local market, if the produce is transported to outside the governorate, the share of the farmers would decrease.

Table 4.2.2 Share of Consumer Payment

Crops	Share of Consumer Payments			
	Assiut Gov. (2009)		National (2007)	
	Farmer	Marketer (Local)	Farmer	Marketer
Summer Crop:				
Tomato	40%	60%	48%	52%
Pepper	48%	52%	24%	76%
Eggplant	40%	60%	28%	72%
Molokheiya	33%	67%	-	-
Taro	33%	67%	40%	60%
Cucmber	48%	52%	29%	71%
Winter Crop:				
Potato	40%	60%	37%	63%
Green bean	40%	60%	32%	68%
Onion	-	-	30%	70%
Garlic	-	-	23%	77%
Carrot	-	-	25%	75%
Spinach	-	-	22%	78%
Cumin	-	-	69%	31%
Aniseed	-	-	60%	40%
Caraway	-	-	53%	47%

Source: Assiut: Assiut Agriculture Office
National Data:
Study of the Indicators of Agricultural Price Vol. (2) 2007, MALR
Statistics of the Agricultural Prices Vol. (1) Winter Crops 2008, MALR

(3) Deficiency of marketing information system and limited benefit to farmers

The causes of price fluctuation of fruit and vegetable are the amount of supply, season aspects including harvest timing and religious calendar, transaction levels, quality, transaction place (Delta region or Upper Egypt region), and timing. Prediction for prices of fruit and vegetables is difficult even for traders. According to wholesalers, the prices are affected by supply amount rather than seasonal factors. Wheat and sugarcane have official prices, determined by the government, and there are five percent premiums according to impurities rate and the sugar rate. If farmers get the market information properly, they will be able to select which crops they produce, but at the same time, they must improve their technical skills. Farmers tend to produce traditional crops (wheat, maize, and berseem) for subsistence, and also sugar cane which has governmental official price rather than producing high price expected crops. This situation indicates that farmers avoid high risk, even though they have the opportunity for high returns.

Generally, farmers are apt to plant cereals the traditional way, because these prices are steady and these are consumed at home as the main food. On the other hand, if the farmers can obtain the price information and selling places become sure like onion, garlic, potatoes and pomegranate, eagerness of farmers become higher. When farmers are informed as to the higher income that can be obtained, or that NGOs support exportation of crops by providing the planting technology to the farmers and establishing distribution route from farmers, motivation of farmers becomes higher. However, it is necessary to establish the steady selling volume of crops and reliable continuous distribution routes for introduction of the post-harvest and processing facilities.

(4) Absence of quality standard

Fruit and vegetables distributed in the governorates are not standardized for their quality. Fruit and vegetables are selected by size and braise at the transaction level of middlemen and wholesalers. Traditionally, trade volume is decided by each crop, and the trade unit is stable. Also, trade prices are decided by the kilogram. Regarding grains, water content ratio and impurities ratio are reflected in their prices. These factors are inspected when the products are sent to the milling factories from farmers, cooperatives, and BDACs. In the targeted area, white maize is mixed into flour by 10 to 20 percent, and then they are sold to bread making companies. Maize is inspected in water content ratio, molds, and immature grain. Quality standardization or shipping standard for export products is based on the standard of either the importing countries or traders. The pesticide residue research center of the MALR will conduct pesticide residue inspection mainly for products shipped to the European Union. The exporters are comprised of five big companies, seven medium sized companies, and more than a

hundred small sized companies. Nivex Company is one of the seven big companies, and they point out that safety and traceability are one of the most important factors for export.

Table 4.2.3 Exported Produce and Required Standard

Agricultural Products	Shipping to	Required Standard
Green Beans	EU (U.K., Germany, etc.)	Pesticide Residue, Size, Breed type
Eating Grapes (red/white)	EU (U.K., Germany, etc.)	Pesticide Residue, Size, Breed type
Eating Pomegranate	Gulf countries	Three ranks by size
Garlic	EU (Germany, etc.), Gulf countries	Size, breed type
Onion powder	Russia, EU (Germany, etc.)	Pesticide Residue, water content ratio
Dried Basil/ volatile oil	Gulf countries, EU (Germany, etc.)	Impurities
Cumin, Caraway, Fennel, Dried Coriander	Gulf countries	Impurities
Jojoba, oil materials	EU (Germany, etc.)	Pesticide Residue, Impurities
Matured compost	Libya, Syria, etc.	Contents, C/N ratio

(5) Weakness and decline of small farmers' marketing organizations

Specialized cooperatives by corps in each governorate collected and shipped products, and also sold agricultural inputs to farmers with cheap prices until 1985. Due to the liberalization of agricultural marketing, the role of specialized cooperatives has shrunk. Consequently, general cooperatives are also unconcerned with marketing, and the competitiveness of cotton has decreased as a result. Governmental newspapers point out that production of wheat is likely to decrease like cotton. The role of marketing has shifted from agricultural cooperatives to BDACs. This is a new challenge for the country to sustain the marketing function of the bank. No other countries have this kind of collection and distribution system. From another point of view, the bank has the ability to strengthen the function of wheat marketing because they collect the cost of fertilizers from farmers more strictly than cooperatives. However, they store wheat and fertilizers outside so there is concern about degradation of quality and product losses.

There are some movements that various organizations take part in, such as cooperative pre-members, traders, practical farmers, CDAs, and NGOs involved in marketing of fruit and vegetables, instead of comprehensive cooperatives and specialized cooperatives. Collective shipping for specialty crops has been attempted and collective jojoba and potato shipping has already succeeded with local traders. On the other hand, marketing groups organized by NGOs and CDAs struggle to continue their activities without support from outside donors. From the buyers' point of view, scheduled shipping with stable prices and quality is necessary, but it is not easy for producers to achieve these points. Members of farmers' groups must be concerned with maintaining good relationships with traders.

(6) The weakness and underdevelopment of physical conditions, organization, facilities and marketing services for the vast majority of wholesale and retail agricultural markets

There is a wholesale market spanning five feddan located in a suburb of Assiut. Agricultural products are distributed from both inside and outside the governorate. First, middlemen sell agricultural products to wholesalers, and then second middlemen deal with retailers. The market is divided into small zones for traders, and these spaces are managed by wholesalers. Visitors, typically numbering in thousands of people a day, cause congestion with large tracks, pick up tracks, and carriages. Therefore, traffic is stacked and it takes a lot of time to carry the products out from the market. By contrast, there is no wholesale market in Minia. Retiles and wholesalers are mixed up in a small shopping street located in the center of the city. Product distribution is inefficient, and

there is also a lack of hygiene. There is an urgent need to construct wholesale market facilities in Minia.

Retailers sell their products in specialized shops for fruits and vegetables, retail markets, and roadside stands. Fruit and vegetables are sold on roadside in the center of districts and villages. This is because there are no fruit and vegetable markets. This situation is not good for hygiene. For example, bacteria coliform and salmonella are encouraged to multiply by the feces of cows, donkeys, and other life forms. These bacteria can possibly attach to agricultural products, and this makes agricultural products perishable quickly. It is necessary to make a wholesale market with low cost and usability like a community wholesale market.

4.3 Agriculture

4.3.1 Crop Productivity

In general, crop productivity in Egypt is very high comparatively. According to the FAO statistics database, the yield rate of wheat was 5.6 - 6.5 ton/ha during 2008 to 2010, which was more than double of the world average. Also the yield of maize was 7.3 - 7.9 ton/ha during 2008 - 2010, which was about 150 % of the world average. Yield rates of other major crops, such as rice, sorghum and sugarcane, are also much higher than the world average, because of the rich in irrigation water, solar radiation and temperature. However, the yield rates of vegetables, such as cucumber, watermelon and tomato, are not very high compared with the world average. Those yields in the 3 year average were 69 %, 104 % and 117 % of the world average, respectively. The productivity of these vegetables can be improved in Egypt.

Table 4.3.1 Yield of Selected Crops in Egypt and World (2008-2010)

Crop	2008			2009			2010			Average
	Egypt (ton/ha)	World (ton/ha)	Egypt/ World	Egypt (ton/ha)	World (ton/ha)	Egypt/ World	Egypt (ton/ha)	World (ton/ha)	Egypt/ World	Egypt/ World
Cucumbers	18.6	30.5	61%	22.1	31.0	71%	22.4	30.2	74%	69%
Eggplants	25.7	24.8	104%	27.5	25.7	107%	49.2	25.2	195%	135%
Garlic	28.8	16.2	178%	26.7	16.7	160%	25.3	14.7	172%	170%
Grapes	23.7	9.4	253%	21.4	9.1	235%	21.2	9.5	224%	237%
Maize	7.9	5.1	154%	7.8	5.2	152%	7.3	5.2	139%	148%
Okra	14.5	6.5	225%	14.4	7.0	206%	12.5	6.3	199%	210%
Onions, dry	36.9	19.8	187%	35.6	20.1	177%	35.9	20.0	180%	181%
Potatoes	25.9	18.0	144%	26.4	17.9	148%	25.9	17.4	149%	147%
Rice, paddy	9.7	4.4	223%	9.6	4.3	222%	9.4	4.4	215%	220%
Sorghum	5.6	1.5	383%	5.5	1.4	396%	5.0	1.4	364%	381%
Sugar beet	47.4	51.8	92%	48.0	53.6	90%	58.3	48.9	119%	100%
Sugarcane	121.2	71.7	169%	116.4	70.3	166%	116.8	70.8	165%	167%
Tomatoes	38.3	33.2	115%	40.8	34.7	118%	39.5	33.6	118%	117%
Watermelons	29.8	28.7	104%	28.8	28.7	100%	30.3	28.2	108%	104%
Wheat	6.5	3.1	212%	6.4	3.1	209%	5.6	3.0	186%	202%

FAOSTAT | © FAO Statistics Division 2012 | 18 April 2012

4.3.2 Greenhouse

In New Land and suburbs of Minia city, there are some greenhouses to produce seedlings of vegetables and vegetable crops. Greenhouse cultivation has some advantages, such as high land productivity, control of harvest season, and easy quality control. The number of greenhouse reached413 in Minia Governorate in 2008. The standard size of the greenhouse is 9m width, 60mlength and 3m height. The 540 m^2 or about 3 karat greenhouse costs LE 18,000 to LE 20,000. Such a high initial cost may be a deterrent for small scale farmers, although it would enable them to

earn much more from their land[6].

4.3.3 Off-season or High-price Season Production of Horticultural Crops

As the warmer Upper Egypt region has the advantage of earlier harvest of horticultural crops, there is a chance to meet high shipping prices. In general, the harvest time of winter vegetables in the region is one month earlier than the Delta region. In the case of the Nile potato, the price in early November is as high as 2,400 LE/ton, and decreases to 600 LE/ton in December. The cropping pattern and cultivation method of horticultural crops focuses on the early harvest, for example, introducing early-mature varieties, using greenhouses or tunnels, using transplantation of seedlings, and shifting the planting season.

Vegetables are cultivated in this area is mainly in the winter season, while very hot weather in the summer season is an obstacle to vegetable growth. As prices of vegetables fluctuate significantly by season, summer vegetables could bring much higher income to farmers than winter vegetables.

4.3.4 Use of Low-marketable Products

Agro-processing could be profitable for producers in terms of more added value, preservation of high-season harvests, and use of slightly damaged products. In the case of the tomato, producers sometimes cannot sell their product at the peak harvest season. One of the countermeasures against such short-run overproduction is agro-processing of source, juice, dried products and so on. In case of fruits, damages on fruit surfaces make market value very low. Such fruits are acceptable for material for juice, jam and other processed foods.

4.3.5 Crop Diversification

New or unique crops or varieties always have the possibility to bring high returns to initial producers. The agricultural extension service agencies keep attention on such information in collaboration with MALR research institutes, universities and private firms, and support farmers who intend to produce such crops.

4.3.6 Expansion of Cash Crops under the Intercropping System

The intercropping system of cash crops with traditional crops is a possible way to generate farm income for small scale farmers. Most of farmers plant only traditional crops, such as wheat, maize and berseem, to meet home consumption and to sell surplus at stably low price. They hesitate to take risk in planting cash crops in their limited farmland. If such farmers employ intercropping system of summer vegetables or medical/aromatic plants with maize, they can fulfill their staple food needs and generate additional cash income.

4.3.7 Possibility of Utilizing Organic Fertilizers and Bio-control

(1) Rising Price of Chemical Fertilizers

Egypt is an exporting country of nitrogen and phosphate fertilizers; 1,691 thousand ton (conversion to N) to France, 899 thousand ton (P2O5) to India and 552 thousand ton (P2O5) to Indonesia in 2010. FOB price is always reflected by the international trade price. The cheapest production method of

[6] The productivity of vegetables in this greenhouse could be the same as one feddan of open field (8 times). Assuming the net income of winter tomato in open field is about LE 780 per 3 karat (LE 6,240 * 3/24) and that with greenhouses can be LE 6,240 per 3 karat, the initial cost can be recovered in four seasons.

nitrogen fertilizer is to elaborate ammonia reacting nitrogen gas in air with hydrogen contained in natural gas. Therefore, the exporting prices of chemical fertilizers are directly reflected by the index of international future market of natural gas (NYMEX: New York Mercantile Exchange).

The small scale farmers have been razing the issue of high production cost. Especially in this season affected by the revolution, the price of chemical fertilizers skyrocketed as 3 times as the price of last year, so the poor return by the rise of production have become clearer. The domestic prices of chemical fertilizers normally show the peaks during the preparation of soils in January for summer crops and in July for Nile crops. Nitrogen fertilizers are manufactured by two national fertilizer companies; Abu Qir Group and Delta Rising Group. The distributing channels are divided into two; quota system through BDAC and free market through private agents. According to agricultural officers, 20-25% of total demands are distributed to farmers through BDAC. The national companies have independent accounting system and act as a private company. So they are shifting from governmental order to private marketing system or export.

Market Environment of Chemical Fertilizer

Increase of worldwide demands
- Increase of demands of foodstuff due to expanding population
- Increase of cereals due to change of life style in BRICs and other countries
- Increase of production of bio-fuel

Limited supplies
- Maldistribution and oligopolization in production
  （P2O5：USA, China, Morocco）
  （KO2：Canada, CIS, Germany）
- Tightening in supply market (decrease of surplus)

Price increase in petrochemical products
- Cost increase in raw materials of chemical fertilizer

↓

Increase of international prices

↓

Low supply and price increase in domestic market

Increase of export from Egypt due to gap of international and domestic prices

The domestic price of chemical fertilizer jumped up to triple in June, 2011. MALR had directed to allow distribution system through agricultural cooperatives, not only through BDAC. The landowning farmers can procure fertilizer from agricultural cooperatives, but the peasant farmers do not possess to purchase fertilizer from agricultural cooperatives. The most of peasant farmers are forced to purchase from private distributors at 1.5-3.0 times in price. The international trade conditions in export and import of fertilizer show increasing demands and limited supplies, and the price will set on higher range. This situation affects to farmers' income directly.

In this circumstance, it is necessary not only to promote bargain power and upgrade product quality, but also to reduce production costs and keep productivity. According to the Farm Household Survey, 43 % of 83 wheat producers use organic fertilizer in Minia Governorate. Farmers should increase the application rate of organic fertilizer, such as compost made from crop residue and animal dung, to save cash expenditure for chemical fertilizer. Besides, some bio-fertilizers are developed and produced by private companies under technical assistance of universities and research institutes. The agricultural extension service agencies should collaborate with MALR research institutes, universities and private firms, which have great knowledge on this field. Furthermore, this is a potential strategy for producing organic farm products, and target urban markets. Linkage with the private sector would be important.

(2) Soil Condition of the Nile Valley and Possibility of Utilizing Bio-materials (Bio-fertilizers)

Along the Nile, alkali soil is prevalent and there is a possibility that the absorption of potassium and iron by plants is constrained by saline elements such as CaO and NaCl. To mitigate the constraint, it is desirable to apply leaching with irrigation water or strengthening drainage system. However, the limitation of water resources in Egypt hinders this mitigation measure. Therefore, following alternatives are recommended: 1) mix diluted sulfuric acid with irrigation water, 2) accelerating the

production of mugineic acid by salt tolerant crops such as sorghum and adsorbing salt to the plant, and 3) accelerating the production of organic acid by microorganisms in heavy use of full matured compost.

Generally, the farmland soils along Nile River indicate the range of pH7.5-9.0. In the alkaline conditions, the displacement of nitrogen from ammonium to nitrate by nitrate bacteria process in slow actions. The mineral deficiency diseases due to less resolving of minor minerals appear. Specially, the minerals such as K, Fe, Mn and B cannot be absorbed by the plant roots. As the result, it can trigger to malnutrition and disease damages, and then the crops will be valueless due to damaged shapes and shorter shelf lives, which are negative features in marketing. The tastes of crops are degraded by depression of amino acid and enzyme required for Tricarboxylic acid (TCA) cycle of biochemical reactions of plants and less production of synthesis of glucose.

A bio-fertilizer using microorganism is effective on its action and economic impact. In the condition of more than pH7.5, the plants cannot absorb minerals such as K, Fe, Mg and B from roots, and can be easily affected by pests due to malnutrition. The microorganisms containing in bio-fertilizer produce organic acids in rhizosphere, and help transform unavailable substances to available substances in soils.

(3) Pest Control (Tuta Absoluta)

The problem of pest damages with chemical resistance is also serious. Specially, Tuta Absoluta, or known as tomato leaf miner, has been spreading in Mediterranean countries including Egypt. It is reported the moth completely damages tomato within 3-7 days after hatchling larva. Also the moth is going to damage all Solanum crops such as potato, aubergine, capsicum, etc. Tuta absoluta, has been spreading year by year from South America to South Europe, Middle East, South West Asia, North Africa and East Africa since 2009. Some countries order to ban fresh tomatoes. Many tomato farmers spray organophosphorous pesticides with intervals of once 3-5 days, which cost 600-5400LE/feddan/crop season.

In the Pilot Project for the intercropping demonstration for summer tomato, bio-control against pest was confirmed effective. Especially against Tuta Absoluta, the prevention measures by the growth stage of the pest was verified effective, namely, parasitizing to the eggs by Trichogramma, calcification of protein at larval stage, and inhibition of mating by pheromone at the adult stage. In the Pilot Project, the material such as anti-insect and Bacillus thurigiensis (Bt) produced by Central Lab of Organic Agriculture, but they are costly due to transportation from Cairo. The Lab has its branch in Abnoub District, Assiut Governorate, and it is recommended to produce in Assiut. For parasite bee, trichogramma, Assiut agricultural directorate have been producing for cotton originally. All materials for bio-control should be produced in Assiut and constructed urgently under supervision of the Lab researchers.

4.3.8 Distribution of Agricultural Inputs

The government agricultural extension service is usually limited for major field crops only. As the marketing channel of production materials of horticultural crops is limited, small-scale farmers cannot access easily to the marketing system. In fact, many inputs for the demonstration farms were procured from reliable traders, producers or research institutes located in outside of the Governorate. Access to various farm inputs shall be improved to common farmers. Also in order to lower the prices of materials for bio-fertilizer and bio-control, it is necessary to improve distribution system.

4.4 Farmers' Organization

4.4.1 Present Situation of the Village Agricultural Cooperative

In the Pilot Projects especially for the establishment of agro-processing unit, the village agricultural cooperative was targeted to be the management body of the unit. Historically the first agricultural cooperative in Egypt was established in 1910 as a mutual cooperation of the farmers. Then the agricultural cooperatives were restructured as an agent to control farmers in order to execute the agricultural production plan of the Government from 1950's to 1960's. Although farmers at that time could save the transaction cost by following the instruction of the cooperative and reduce the risk of marketing through the shipping of produce by the cooperative, the incentive of the farmers to make effort to increase the production was suppressed as they were totally under the control of the cooperative from production to sale.[7]

Liberalization policy for production and marketing started endorsing from late 1980's and the farmers became free to choose what to cultivate and started selling their produce to private traders. Under such policy prevalence, today the agricultural cooperatives have been circumscribed in their duty of distribution of agriculture inputs and administration of farmland (the owner of the farmland is basically the member of the agricultural cooperative). The cooperatives are the ultimate source for information on land holdings. Any dealings, inheritance and changes of area plots are made official by the intervention of the cooperative. All dealings have to be recorded by the cooperatives and are certified by the cooperatives. That is why the cooperative can guarantee farmers the ability to take out loans against their land ownership.

There is a minimum quota that the cooperatives provide to farmers at cooperative rates of pesticides and fertilizers, as well as some obligatory pesticides in conjunction with the cooperative pest control, such as is the case with cotton. Due to the legal framework of dealing in public money and the accountability of spending public money, which all the reserves of the cooperatives and cooperative funds are; the commercial activity of the cooperative is defined more by risk aversion rather than risk taking. This places the cooperative at a disadvantage in operating in commercial activity and making use of their funds and cash reserves, where the private operators are risk takers and therefore, if successful, gain more of the market activity. This is especially the case in the marketing of agricultural products.

Revitalization of the agricultural cooperatives to contribute to the welfare of the small scale farmers has been an issue under the prevalence of the global economy, which is widening the disparity between urban and rural economy. MALR has prepared "Strategy for the Development of Agricultural cooperatives (2002-2017)" to urge the change of the cooperatives in shape and content to match the transformed economy. In the Pilot Projects, we have tried to create added value and job opportunity in rural area through activating the village agricultural cooperative. Following aspects were observed:

- Village agricultural cooperatives have assets and skilled staff and also deal with distribution of agriculture inputs. They have a potential to deal with the agriculture produce, as well.
- Involvement of the cooperative board members was weak (cooperative staff was mainly working). Board members are rather honorary post representing the big families in the villages and not necessarily business-oriented persons. Hence there are not much action to activate the savings

[7] "Political and Economic Transformation in Egypt" (Yamada) 2008 JETRO / IDE in Japan

of the cooperative or collecting share value from the members to invest in business.

- The revenue from the agro-processing is supposed to manage in a special account. This is due to the anxiety that if the revenue is kept in the general account of the cooperative, it would become difficult to withdraw it as it requires the approval of the board members and the board members indifferent in the business would not easily approve the withdrawal of money. That may be an obstacle to the business.
- On the other hand, the organization of board members was taken into consideration the social balance in the village, i.e. each big family in the village was represented as a member of the board.

The current village agricultural cooperatives are rather a part of the traditional side of the village livelihood. In order for the village agricultural cooperatives to be an agency of activating rural economy, the cooperative should become more business oriented organization. Following analyzes the scale of the village agricultural cooperatives in Minia and Assiut to estimate the potential of the village agricultural cooperatives to be a business driver in the village.

4.4.2 Scale of the Village Agricultural Cooperative

According to the data on the village agricultural cooperatives (all the 342 villages and 250 villages in Minia and Assiut Governorates), the scale of the village agricultural cooperatives is as follows. The average total area of cooperative members per cooperative in Minia and Assiut are 762fed (320ha) and 1,214fed (510ha) respectively and the smallest cooperative is 80fed (34ha) and 26fed (11ha) respectively and the largest one is 10,567fed (4,438ha) and 5,137fed (2,157ha) respectively showing big gap between the smallest and largest. The median in Minia and Assiut are 1,245fed (523ha) and 936fed (393ha) respectively. In Minia, the shares of the cooperatives with less than 1,000fed (420ha), less than 2,000fed (840ha) and less than 3,000fed (1,260ha) are 40%, 72% and 90% respectively. As for Assiut, these shares are 53%, 83% and 93% respectively. The cooperatives collect subscribed share from the members at the rate of LE2 to LE5 per feddan. In case of the cooperative in Minia at median level, its income by the subscribed share would be LE2,490 to LE6,225.

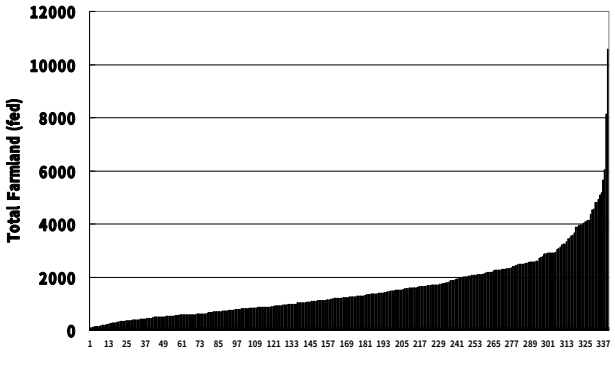


Figure 4.4.1 Farmland by Cooperative in Minia(2009/10)
(Source：Minia Agriculture Directorate)

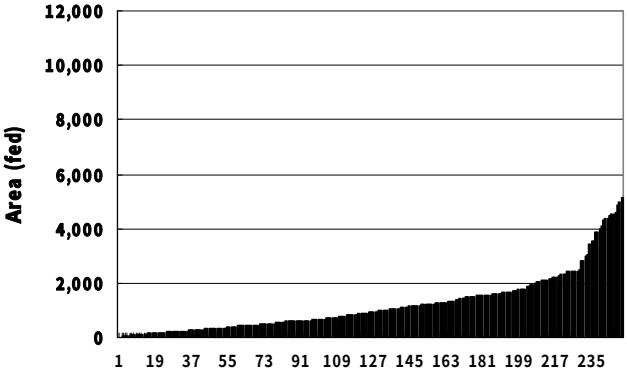


Figure 4.4.2 Farmland by Cooperative in Assiut(2011/12)
(Source：Assiut Agriculture Directorate)

The average number of the members of the village agricultural cooperative in Minia and Assiut is 835 and 882 respectively. The smallest one in number of the cooperative members in Minai and Assiut is 75 and 42 respectively and the largest one is 3,067 and 4,040 respectively. The median in Minia and Assiut is 693 and 715 respectively. The cooperatives with less than 1000 members in Minia and

Assiut occupy 70% and 68% respectively and the ones with more than 2,000 members are only 6% and 7% respectively.

If the village agricultural cooperative took action, it would have a big impact to the rural economy. It is desirable that the cooperative can render services to all the village members including tenants who are not the member of the cooperative (according to the Agricultural cooperative Law, the tenants can be a member of the cooperative though). It is possible that the cooperative raise fund from the members or also from tenants under their auspices to cover the necessary investment capital. There should be facilitating an environment to encourage the cooperative to be business oriented.

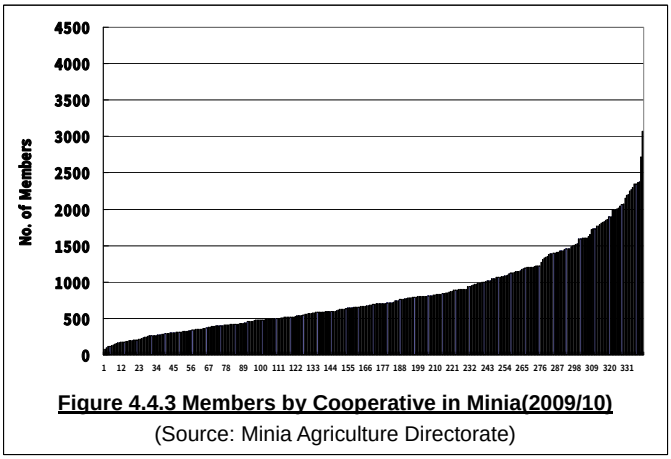


Figure 4.4.3 Members by Cooperative in Minia(2009/10)
(Source: Minia Agriculture Directorate)

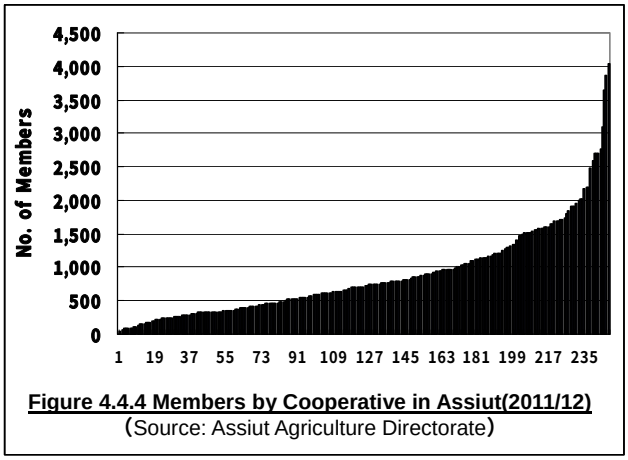


Figure 4.4.4 Members by Cooperative in Assiut(2011/12)
(Source: Assiut Agriculture Directorate)

As the financial data of the village agricultural cooperatives are not well organized. With the available financial data of Maghagha and Beni Mazar Districts in Minia, we would estimate the financial status of the cooperatives. Total number of the village agricultural cooperative in these two districts is 80. The data show the capital of the cooperatives at the end of fiscal year 2009 (June 30, 2010). The average capital is LE4,834, the smallest one is LE152 and the largest one is LE21,652 and the median is LE3,841. Among the 80 cooperatives, 60% has the capital of less than LE5,000 and 94% are with the capital of less than LE10,000. It can be said that the financial capacity of the village agricultural cooperative is generally weak.

Whereas, according to the actual performance of the village cooperatives in dealing with agricultural inputs in fiscal year 2009 in Minia, the sales of wheat seeds, chemical fertilizers and pesticides by all the village cooperatives reached to LE6.2 million, LE163 million and LE0.8 million respectively. Average dealings per village cooperative is calculated at LE18,000, LE477,000 and LE2,000 respectively. Profit ratio for these dealings seems, however, low. Following table shows the financial status of the village agricultural cooperatives of the Pilot sites:

Table 4.4.1 Financial Status of the Village Cooperative Engaged in the Processing

Cooperative	No. of Members	Farmland (fed)	Major business	Annual Income (LE)		Fertilizer Dealing (t)	Store Capacity (t)	Remark
				Gross Income	Net Income			
Rifa	2,190	4,587	Fertilizer sales, fodder sales, renting rooms		1,800 (2007)	150		New office built recently
Arab El Kadadeh	489	845	Fertilizer sales	266,046 (2008)	1,440 (2006) 2,880 (2007) 3,780 (2008)	70	75	
El Egal EL Bahary	2,081	1,616	Wheat marketing, fertilizer sales, fodder sales		1,343 (2010)	50	50-70	New office under construction
Delga	2,800	10,567	Fertilizer sales, renting rooms		44,000 (2008) 24,000 (2009)	200	200	Stopped fertilizer after 2008

The major business of the village cooperative is distribution of fertilizers, but the profitability of this business is very low. Also the storage capacity of the cooperative is not so big that it constrains the scale of the business. Hence, even relatively bigger cooperative are not making profit very much. The total annual net income of Arab El Kadadeh village cooperative with around 500 memberships is estimated at LE1,000 to LE4,000. Rifa village cooperative has moved their office by their own expenditure in 2007. They spent LE500,000 out of their total savings of LE600,000. In 2010, they lost LE50,000 for dealing with fertilizers (there was a occasion that they had to sell fertilizers at cheaper price than cost price). Net profit ratio of sales of fertilizers and wheat seeds is around 2%. For El Egal El Bahary village cooperative, they purchased a land last year and now are constructing the new office as their old office has become narrow. This cost for new office made worse balance than Arab El Kadadeh, though their memberships are 4times bigger than Arab El Kadadeh. Delga village cooperative has a stable income from the room rent an their income is also high. Their memberships and farmland is one of the biggest in Minia Governorate and hence their income from the annual subscribed fee reaches to LE20,000.

The data on the agricultural cooperative is compiled by handwriting making it difficult to trace the records. That makes financial management of the cooperative based on numbers difficult. The financial ability of the village agricultural cooperative is not so strong, but they deal with the cash flow valued to hundreds of thousands of LE annually. As extension of such activity, it can be said that the village agricultural cooperative has enough potential to establish agri-business such as processing.

4.4.3 Farmers' Organization Other Than Cooperatives

There are other organizations like CDA (Community Development Association) i.e. NGO to be registered to the Ministry of Social Solidarity. CDA is seldom established for agriculture purpose but for other social activities. Shams Project by USAID / CARE or project by CEOS (NGO) used the existing CDA adding the collective work for agriculture business, namely contract farming. As many of them have ceased the agriculture activity after the project ended, we did not target CDA for the Pilot Projects. Yet, including the new establishment of the organization, they could be a body to run business to be assisted by the external donors. Other donors tend to work with CDA. Following summarize the characteristics of the cooperative, CDA and other informal group:

Table 4.4.2 Strength / Weakness of Organization

Ca	Law	Supervisor	Strength / Weakness	
Agricultural cooperative	Agricultural Cooperative Law (122/1980)	Ministry of Agriculture and Land Reclamation	S	• Large number of membership • They have a nation wide network • Staff get salary subsidy from the Government • They have assets like land and buildings • It is a representative organization in the village and social balance is considered for the board members • Organized in all the villages • They can apply for loan from public agency
			W	• Staff is assigned by the Government and they are not originally business oriented • Board member is rather honorary post, not business oriented • Historical background hinders the trust of farmers to the cooperative • Basically landowner is the member (tenant can be a member and receive the service based on the law)
NGO/CDA	NGO Law	Ministry of Social Solidarity	S	• Purposeful and motivated people tend to organize it • They can apply for loan from public agency • Tenant can be a decision maker in the organization
			W	• The scale of the organization is not so big • There is no regional network • Financial ability depends on the members
Informal group	-	-	S	• Purposeful and motivated people tend to organize it • There is no bound by the specific law and can act freely within the common sense
			W	• Scale is small • There is no legal status that hinders to access to public loan facilities • Restrained in business expansion

4.5 Agricultural Extension Services

The role of the extension officer in introducing new technologies and up-to-date knowledge has become a weaker role of the extension officer than it used to be. While the extension officer still has access to knowledge that is useful to farmers and also can access research capabilities, he is not at the level of offering new technological techniques and equipment, nor development of any. A lot of the consultation roles for the farmers are supplemented, depending upon the agricultural engineers of the cooperatives and the sales and marketing persons of the chemical companies who promote their products. This is also done through the fertilizer, pesticide and herbicide outlet stores who also have gained experience to recommend chemical interventions to solve some of the farmers' inquiries.

The experimental farms, a strong and powerful extension tool, are available to the extension staff, but centers are limited and are therefore only used to focus on traditional crops, although at times experimenting with new breeds. This does not match the pace of diversification and development the market and the farmers are developing at and the small farmer needs to mitigate and avoid risks embarking on an experiment with a new product or crop. They are mostly run by the cooperative staff, but not by the extension centers, due to limited resources available to them.

All the centers complain about lack of resources, which is a real issue simply by observation of the state of the centers, the facilities available and the equipment available. There are, however, active centers. These centers are able to attract other activities than just what can be held on the center premises, and use the well-equipped extension resources available while using the others' funds to provide the operational capital for holding events. The majority are not active, ill-equipped, and unqualified to meet with the new commercial crops being introduced.

The main obstacle to the activity of the centers is not the lack of financial resources, because the activity of holding sessions is not constrained by cash. It does not cost too much to hold the training session. The active centers have enough qualified staff to hold the session, and some have proven to be able to generate revenues to finance some of their activities.

The development constraints and potentials to improve the services the extension centers provide are summarized as follows:

(1) Constraints

1. There are insufficient extension specialists and vehicles on the village level, and problems still remain at the village level due to lack of extension specialists, in spite of requests from farmers.
2. Equipment, materials and facilities for training are not sufficient due to the deficiency of the governmental budget.
3. Extension workers are aging and new recruitment has been suspended.

(2) Potentials

1. There is a close link between extension centers and research stations, and they're ready for transferring new agricultural technologies and horticulture, pest and rodent controls.
2. An agricultural development support center (Mallawe Media Support Center) under the MALR is provided at the Minia governorate to train extension specialists.
3. Research into organic agriculture is developing and farmers are getting aware of the positive effects of healthy food produce.
4. Linkages between local cooperatives and private companies dealing with fertilizer, pesticide and seed will contribute to supplemental extension services.

4.6 Agricultural Finance

4.6.1 High Interest Rate and Transaction Cost

There are three major problems about the current agricultural finance system: high transaction cost, limited access to loans, and complicated loan procedures. According to farmers who borrow the money from the BDACs, they have to pay transaction costs on top of the usual interest, such as the cost of filing and documentation. If farmers take the loan for the summer crop and winter crop, their interest rate will be 11% in total per year; however, the total cost seems to reach around 14% including other extra costs. This is one of the causes that push their production cost high. Low-cost loans are necessary for small scale farmers, and the PBDAC is needed to implement more efficient management to reduce operational cost.

4.6.2 Limited Access to Loans

One of the most important problems is limited access to loans of agricultural activities. As stated, the BDACs have played a major role in providing loans to farmers. This means that the BDACs are almost the only available credit provider for small scale farmers. Therefore, even if interest and transaction costs are high, most farmers do not have any other choice to get money. There is no incentive for farmers to cultivate new crops. In fact, most agricultural loans are used for traditional crops. There are few farmers who try to cultivate new crops by using agricultural loans. Cooperative staff emphasized the difficulty of encouraging farmers to do new things. The current situation appears to put farmers into cultivating traditional crops rather than cultivating profitable

horticulture crops.

4.6.3 Complicated Loan Procedure

Transparency of loan procedures is also a problem because the procedures and their contracts are very complicated. The application form has about 30 pages and some farmers cannot get the contents of agreement with the bank. In fact, the answers of questions about banking services are different from person to person. There are farmers who do not even know how much money they will pay back.

4.6.4 Potentials

Although there are constraints about agricultural finance, some possibilities are recognized to improve the situation. For example, there are Community Development Associations (CDAs) in many villages. Their activities mainly support women and farmers by providing small amounts of loans. One of the main characteristics of these associations is to target landless farmers and women who cannot get access to the PBDAC. Also, the Social Development Fund does the project called "Comprehensive Agricultural Development Project" in order to improve farmers' livelihoods. Their interest rate is usually lower than the PBDAC. Also, the IFAD does the project called the "Rural Development Project" with low interest rates in Assiut. Furthermore, one village cooperative utilized the fund called the "Agricultural Research and Development Fund" and started to provide loans to farmers directly.

4.7 Lessons from Other Donor Activities

This section summarizes the major activities of donors in the project governorates relative to this project. Major donors are IFAD, the Coptic Evangelical Organization for Social Services (CEOSS; NGO), USAID / CARE, and the SFD / AfDB. The IFAD and the CEOSS are undertaking on-going projects. The USAID /CARE supported project has terminated and the SFD /AfDB is going to start a project in near future. Tables below summarize the projects of these donors. The detailed description is attached as APPENDIX 4.2.

Table 4.7.1 Referential Projects to IMAP in the Project Area

Donor	Project	Period
IFAD	Upper Egypt Rural Development Project (AEDP)	2007-2015
IFAD	Agriculture Production Intensification Project (APIP)	1995-2005
CEOSS (NGO)	- (engaged in agriculture)	2004 -
USAID / CARE	Agricultural Exports & Rural Incomes (AERI) / SHAMS Project	2003 - 2007
SFD / AfDB	Rural Income and Economic Enhancement Project (RIEEP)	2010 -

The study team collected and reviewed information on the activities of the above projects, and visited some of the farmers' associations established by the projects. Following are the lessons and aspects that this project should take into consideration:

- Outputs of APIP (IFAD), such as crop production technologies in the research center and the Rural Women Center in Minia, are still useful and applicable to rural development activities.
- Credit lines (to be) facilitated by the IFAD and the SFD / AfDB could be a source of funding to implement the activities to be formulated in this M/P.
- The projects have had cases of establishing new farmers' organizations and working with existing organizations. This indicates that if the existing organization got a mission, the experience

accumulated in such an organization could be utilized for development activities, while establishing new associations would be time consuming. The height of external support should be taken into consideration in the capacity of the association to be sustainable after its termination.

- The concept employed by the above projects for improving marketing is to skip middlemen (traders) by connecting exporters or companies directly to small scale farmers in order to give more of the income share to them. Although there have been no incidents heard of so far, potential conflicts with middlemen may have to be taken into consideration.

Table 4.7.2 Brief Descriptions of the Referential Projects

Project	Description
AEDP (IFAD)	The project covers Beheria, Qena, and Assiut and empowers rural poor people to create sustained employment and increase their income. The project will support small enterprise development, particularly through microfinance and partnerships with commercial banks, and by supporting research and extension, it will work to help small farmers achieve higher returns per unit of land and water.
APIP (IFAD)	The project targeted the landless, those with small landholdings (less than 3 feddan), or women who headed households. The project brought a range of support services, namely research, extension and credit, in order to help the target households rapidly adopt technology to improve their productivity and intensify land use.
CEOSS	The objectives of the activities are to 1) reduce cost of production, 2) increase production, and 3) sell produce at high prices in the market. CEOSS helps small scale farmers via a three-pronged program by 1) equipping farmers to switch to organic practices, thus opening up Western markets, 2) utilizing community-based organizations, and 3) helping small scale farmers avoid middlemen by uniting them in cooperatives.
AERI / SHAMS (USAID / CARE)	A significant purpose of the project was to strengthen the competitiveness of Egypt's agriculture, with the expected results of increasing on-farm and agribusiness jobs and rural income. The SHAMS project was implemented in all of Upper Egypt. The project dealt with small and medium exporters. To link the exporters and small scale farmers, the project assisted farmers in organizing farmers' associations.
RIEEP (SFD / AfDB)	RIEEP has two components, namely technical assistance (TA) and agribusiness facility (loans to SME, farmers' associations and cooperatives). The project objective is to improve the livelihood of the economically active, rural smallholder farmers engaged in the production, processing and marketing of selected agricultural commodities (horticulture, livestock and fisheries). The strategies of the project are 1) strengthening smallholder farmer associations (including cooperatives), 2) creating business linkages, and 3) providing and facilitating easy, affordable and innovative access to finance.

CHAPTER 5 SUMMARY OF ISSUES

The following table summarizes the issues discussed in this chapter and also the results of the workshops at the villages presented in the Part I Overview.

Category	Issues	Causal linkage	Representative Challenges
Farmers' Organizations, Agricultural Cooperatives, Extension, and Agricultural Finance	・ Agricultural cooperatives are inactive to commercial activities. ・ Collective activities of cooperatives are rare. ・ Share of inputs supply by the cooperative is decreasing. ・ Most of cooperatives has financial problems. ・ Most staff of cooperatives and extension workers are aging. ・ Marketing through specialized cooperatives has no ・ Role of wheat marketing is to transfer cooperatives to BDAC. ・ High interest rate and transaction cost of BDACs ・ Farmers are not willing to be organized if they do not have financial resource and buyers. ・ There is not enough communication between governorate, district, and village level cooperatives. ・ Extension workers cannot update their knowledge and technology. ・ Understaffing of Extension Centers and decreasing its role ・ Activities of agricultural cooperatives are limited ・ Shortage of extension workers and their limited activities ・ Resources of extension centers at district level are limited. ・ Most extension workers are aging. ・ New technologies has not been transferred to farmers.		・ Agricultural cooperatives do not involve in economic activities. ・ Demand for agricultural cooperatives are changing. ・ Financial role of agricultural cooperatives are weak. ・ Agricultural extension system is degraded.
Agricultural Marketing/ Sales	・ Small scale farmers are difficult to get marketing information. ・ Small scale farmers do not know market demand. ・ Selling price of products fluctuates and difficult to predict ・ Selling price of products is cheap. ・ Conservative food culture in rural areas prevents from developing new variety of products and new processed food. ・ Prices of some crops fluctuate widely. ・ Difficult to keep a relationship between buyers and farmers ・ There are many middle mans (farmers, collectiveness, middleman, long distance transportation, wholesales, middleman, retailers, ・ Farmers do not have transportation for shipping. ・ It is difficult for farmers to market their products to consumers in ・ Farmers cannot get market information timely. ・ Wholesale market in Assiut is small and crowded, and lack of proper management. ・ Wholesale market in Minia is in retail market and crowded, and lack of proper management. ・ Markets at district and community level do not maintain ・ Grading of agricultural produce is not standardized. ・ Marketing channels for small scale farmers has collapsed. ・ Physical condition of most wholesale and retail markets is bad, and their management organizations are weak.		・ Small scale farmers cannot get information for decision making. (crops, inputs, timing, cultivation areas, etc.) ・ It is difficult for small scale farmers to independent economically as a full-time farmer. ・ Small scale farmers are difficult for contentious shipping with agreed amount and price. ・ Farmers' price and consumer price is sometimes different. ・ Distribution within the area and broad area are not efficient.
Post-harvest	・ No activities for adding value to agricultural produce ・ Farmers do not have know-how about processed food. ・ There are no local processed products supermarkets in Minia and ・ There is no wrapping technology for small scale processing in ・ Cultivation area is too small to get products for processing. ・ High interest rate for establishment of processing factories (NBE: 15-16% yearly) ・ There is not specific quality standard. ・ There is trash with drying medical and aromatic plants. ・ Lack of low temperature storage ・ Difficult to keep freshness except fruits, root crops, and fruits ・ BDACs' storage of wheat causes deterioration of quality. ・ Lack of finance for processing machines ・ Selective products are not reflected to their prices. ・ Farmers do not know simple and cost effective post-harvest activities. ・ Agriculture is not machineries to save labor and cost. ・ There are not specific countermeasures for excess supply problem such as tomato. ・ There are not food processing factories in the governorates, and products are easy to damage.		・ Processing industry is not developed in rural areas, and products are less competitiveness than products from ・ There is a huge post-have loss.

Category	Issues	Causal linkage	Representative Challenges
Production	• Lack of irrigation water • Water management is not working well. • There are many low quality seeds and rate of germination is low. • Farmers are difficult to get certified seeds. • Quality of self-seed crops is low. • Governmental subsidy is downsizing and price of fertilizer is • Agricultural chemicals are not effective and they are not distributed properly. • Increasing drug resistance insects • Land resilience is decreasing. • Farmers do not use plant residue and animal manure effectively. • Many farmers cultivate wheat, maize, and berseem so cashibiity is • Agricultural technology is not prevailed in farmers. • Greenhouse is not prevailed and initial cost of greenhouse is large for farmers. • Share of farmers in consumer price is decreasing. • Seasonal price fluctuation is regarded as risk for farmers. • Early cultivation techniques are not prevailed. • Climate change causes high temperature in summer and this situation will affect agricultural crops. • Farmers prefer producing fodder to horticulture because fodder is shortage for farmers. Cost of inputs such as insecticide and chemicals is high.		• Quality of cash crops are degrading. • There is no strong motivation to cultivate new horticulture crops.
Socio-economy	• 61% of farmers in Minia and 77% of farmers in Assiut have less than 1 feddan. • More than half of farmers who have less than 1 feddan have less than 0.5 feddan, and most of them are subsistence farmers. • Rent of agricultural land is high. A number of landless agricultural labors • Most villages do not have activities for establishment of specialty crops. • Health condition is not good generally. • Family size is big and early marriage is common. • Most families cannot get balanced diet. • Half of men and 70% of women did not go to primary schools. • Lack of job opportunities • Limited access to information • Interest rate of BDAC reaches almost 14% per year. • Most farmers borrow money from BDAC to produce only maize and wheat. • There is a huge poverty gap. • There are no opportunities to work.		• Agricultural scale per farmer is small. • There is a economic gap between upper Egypt and delta region, also between urban area and rural area. • Education standard and literacy rate of middle age men and women are low. • There are lack of loan opportunities and collateral.

PART III MASTER PLAN

CHAPTER 1 BASIC FRAMEWORK FOR THE DEVELOPMENT PLAN

1.1 Development Goal

"Sustainable Agricultural Development Strategy towards 2030 (SADS)" of the MALR defines the following vision, mission and strategic goals. This Master Plan will be proposed in order to contribute to realizing the vision of SADS.

Vision: "To achieve a comprehensive economic and social development based on a dynamic agricultural sector capable of sustained and rapid growth, while paying special attention to helping the underprivileged social groups and reducing rural poverty."

Mission: "To modernize Egyptian agriculture, achieve food security and improve the livelihood of the rural populace through the efficient use of developmental resources and the utilization of geopolitical and environmental advantages, and the unique advantages of the different agricultural regions."

Strategic goals:
1. Achieving sustainable use of natural agricultural resources;
2. Increasing the productivity of both the land and water units;
3. Raising the degree of food security in the strategic food commodities;
4. Increasing the competitiveness of agricultural products in local and international markets;
5. Improving the climate for agricultural investment; and
6. Improving the living standards of the rural inhabitants and reducing poverty rates in the rural areas.

This Master Plan (M/P) aims to contribute to the rural development of the Minia and Assiut Governorates through improving marketing of agricultural produce for small scale farmers, namely activities such as improvement of production, including the introduction of new varieties, improvement of post-harvesting, and adding value by processing. All these will be planned based on the needs of the market. Then the Development Goal of this M/P is set as **"Income of small-scale farmers is increased through improving marketing of agricultural produce"**. Also from this concept of the M/P, the M/P will contribute to the strategic goals of "Increasing the competitiveness of agricultural products in local and international markets", and "Improving the living standards of the rural inhabitants and reducing poverty rates in the rural areas" in the SADS 2030.

1.2 Development Approaches

Development approaches to realize the development goal is considered based on the situation of the small-scale farmers in the Project area and the future projection of the agricultural sector in Egypt in accordance with the concept of this M/P. From a general point of view, "improving marketing of agricultural produce" would mean improving the whole process, from the development of agricultural produce/commodity to the sales of it, in order to bring fair benefits to all the stakeholders, i.e. input suppliers, producers (farmers), traders, wholesalers, processors, retailers and consumers. However, the target beneficiaries of this master plan are the small scale farmers.

By realizing an efficient, fair, safe (traceable) marketing system from inputs to consumption, this M/P deals with the part of the marketing system in which small scale farmers would benefit by increasing their income. Then the M/P will be structured based on the actual situation of the Project area, namely most of the farmers have less than 1 feddan of farmland and therefore shifting commercial farming should be promoted, whereas the area established for specialty crops should be further developed and

eventually the profitability per land would have to be increased.

1.2.1 Situation of Small Scale Farmers

As an entry point of surveying the situation of the small-scale farmers, villages were categorized into usual villages and potential villages. This categorization was carried out by the knowledge of the Governorate and District agriculture officers where usual village was meant to represent the general situation of the area and potential villages were selected from the ones which have already had a basis of specialty crop production. In the survey of usual villages, mainly the position of agricultural marketing in the context of rural development in the area was focused and issues of agricultural marketing were surveyed more in detail in the potential villages.

On the number of farmers by land holding size in the villages surveyed, there is a tendency that the share of farmers with less than 1 feddan in the usual villages is higher than the potential villages as shown in the table below. On the rank of more farmers with less than 1 feddan, among the twelve villages surveyed, the top four villages were usual villages. As the share of micro-scale farmers are high, there would be less farmers who venture into horticultural crop for sale, and as a result, the majority of farmers would go with subsistence farming.

Table 1.2.1 Share of Farmers with less than 1feddan (12 villages surveyed)

Governorate	Village Surveyed	Share of 0-1feddan (%)
Minia	Usual villages (3)	75.8
	Potential villages (3)	46.8
Assiut	Usual villages (3)	64.7
	Potential villages (3)	60.4
Total	Usual villages (6)	69.8
	Potential villages (6)	54.2

Through the survey in the usual villages, the focal point was the awareness of the small-scale farmers with less than 1 feddan, who are the majority of the land owners. Most of the small-scale farmers are more like subsistence farmers cultivating only staple foods such as maize and wheat. According to the survey, farmers who hold tiny areas of farmland think that they cannot cultivate profitable horticulture crops and even if they do, they could do only for home consumption. Their interests are rather more in off-farm jobs or animal rearing than in crop production.

As for the potential villages, many farmers are also with tiny farmland areas and are subsistence farmers. From this point of view, there is no clear difference between usual villages and potential villages categorized by the officers in the Governorates and Districts. But there is a significant point in the awareness of farmers in the potential villages; namely in the potential villages, there are farmers whose farmland is tiny but venture into horticulture crop production from the economic point of view. For example, in the El Egal El Bahry village in Assiut, which is an area of pomegranate production, 37.8% of the pomegranate growers hold only less than 0.5 feddan of farmland. Also in the area of specialty crops for garlic, potato, and onion, there are farmers with tiny land areas but still grow these cash crops.

Potential villages, i.e. areas of specialty crops, are not only blessed with natural conditions but also with the existence of advanced farmers who tried to grow the specialty crops with the movement being spread to the farmers around to become an area of specialty crops. It is said that the areas of garlic and onion production in the Project areas started forming the area of specialty crops from 50 years ago. As production increased, some investors came in to establish cooling facilities. Those investments

have also contributed to reinforcing the base of specialty crop production.

It is an important option for small-scale subsistent farmers to seek off-farm job opportunities to increase their income. In fact, in the Nazlet El Ablak village defined as a usual village, three-fourths of the land owners live outside the village because many small-scale farmers gave up earning from farming and sold their land to get money to invest in the education of their children. However, off-farm job opportunities are not stable as the unemployment rate of the country is over 10%. Therefore, increasing profitability of the land even though their land is small can still be an important option to increase the income of the small-scale farmers.

As the examples of the specialty crop areas show, it is expected that the area of specialty crops would be developed by increasing the number of farmers who would engage in horticulture crops one by one. Promoting profitable horticulture crops would create such progress in the village. At least farmers would be able to sell their produce in their area as the vegetables are usually imported from outside the villages in many cases. Since the population growth rate of Egypt is still high and the rural population is big, the concept of local production-local consumption is so vital.

As for the existing specialty crop areas, it is required to strengthen their competitiveness by improving their production, post-harvest treatment and selling based on the needs of the markets and the need to provide assistance to the small-scale farmers to engage in profitable horticulture crops as an option of increasing their income.

1.2.2 Future Projection

The development approaches are considered also, referring to the future projection of the agricultural sector. Key issues will be population growth and its impact on food demand and farmland, economic growth and the demand of consumers along with the contribution of the agricultural sector and governmental policy for agriculture.

(1) Population Growth

The average annual growth rate of the recent years is around 2% in the Project Governorates equal to the national level. In the Sustainable Agriculture Development Strategy toward 2030 (SADS), the population of the country in 2030 is projected to be 106 million, which is a 38% increase to that of 77 million in 2007. The population growth will increase the demand of food but also cause the decrease of land per capita. Though the Government of Egypt is implementing the horizontal expansion policy to reclaim new land to maintain the land per capita in the future, narrowing farmland per capita especially on the old land would still remain as a threat. Urbanization in accompaniment with population growth would also accelerate the smaller land per capita on the old land.

To the rapid population increase especially in rural areas, farmers may react by engaging in off-farm jobs and/or sharing lands with families in order to compensate for the more limited land access. In any way, small scale farmers would remain the dominant segment of the farmers in the rural area of the Governorates. Promoting commercial agriculture for small pieces of land and to the small scale farmers who would be the dominant segment of rural population, profitable use of land should be encouraged. Increasing profitability per land would be a crucial issue in the future, and the farmers should cultivate and create their opportunity of profit by diversification, increasing cropping intensity and value addition by quality improvement and cost reduction. Creating profit not only from the production on the farmland but also from the stages post-harvest, processing and sales would be required.

(2) Economic Growth

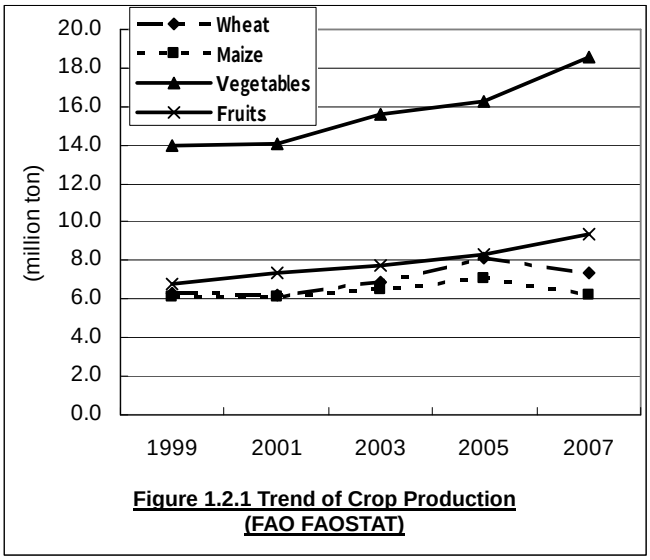


Figure 1.2.1 Trend of Crop Production (FAO FAOSTAT)

The Egyptian economy has been stably growing as annual growth rates for the recent five years have been recorded at 5% to 7%. Due to the revolution in 2011, the economy of Egypt seems to have dropped due to a decrease in tourism for the meantime, but the economic growth would bring the diversification of needs of produce and also valued products such as organic and hygienic food. As shown in Figure 1.2.1, the horticulture production in recent years has rapidly grown. Meanwhile, the annual economic growth rate of the agricultural sector has remained around 3% for the recent years, which resulted in the lowering share of the sector in GDP. However, the share of employment in the agricultural sector still had as significant a number as 28% in 2010 for the whole country and the shares of employment in the agricultural sector in Minia and Assiut were 51% and 37% respectively in 2010. Although the share to GDP is relatively decreasing, the sector would maintain the importance of job opportunity for the rural population.

(3) Agriculture Policy/Strategy

Since the 1980's the Government has been carrying on the deregulation policy for crop production and marketing to adopt the agricultural sector for a free market economy. Farmers are now free to select which crop to cultivate and where to sell their produce. After the 1980's liberalization policy, agricultural production has increased rapidly, but on the other hand, balancing the limited natural resources and agricultural production and food security has been the concern of the governmental policy. Hence, sustainable agriculture and rapid growth of the agricultural sector paying attention to rural poverty are envisioned. Improving the environment for and capacity of small scale farmers in their value addition activities such as processing and marketing would meet the national strategy/policy. The following table shows the comparison among trend, projection and envisaged countermeasures.

Table 1.2.2 Future Projection and Envisaged Countermeasures

Item	Trend	Projection	Countermeasure
Population Growth	Annual growth rate = around 2%. Horizontal expansion (new land reclamation) Decreasing old land	Population increase 38% by 2030. Increase demand for food Increase new land Decrease old land As a result of population increase, land per capita may decrease.	 Horizontal expansion and settlement of youth to the new land **Increase profitability per land (increase productivity, cropping intensity)**
Economic Grwoth	Stable GDP growth (5 – 7% per year) GDP share of agriculture decreasing but employment share in the sector is stable.	Increase of demand for vegetables, fruits and animal products Increase of demand for quality products Share of employment in agriculture remain as present and agriculture sector remains as bais for rural employment.	**Diversifying crops** **Improving quality and safety of produce** Increase the profitability of agriculture Creating job opportunity by agro-industry Developing other industries to balance the employment
Government Policy/ Strategy	Adopting free market: deregulation of crop production and price control Food security	Sustainble use of resources Incresing productivity Food security Increasing competitiveness of agrocultural products Improving investment climate Improving living standard of rural inhabitants	Increasing productivity **Improving marketing ability of farmers** **Attention to rural poverty**

1.3 Development Strategies

1.3.1 Development Strategies

Considering the above situation of the small-scale farmers and future projection, it would be required to increase the profitability per land to face the tight land resources. It is, therefore, required to promote agriculture with higher value production to meet the needs of markets, namely promoting horticultural crops, quality improvement, crop diversification, agro-processing, etc. With these backgrounds, we would set the development strategy to increase the income of small scale farmers through improving marketing of agricultural produce as: **"Small scale farmers producing, processing and selling agricultural produce at high value according to the needs of markets in cooperation with their peers"**. The strategy needs to assist small scale farmers to increase their income by engaging not only in production but also in processing and selling.

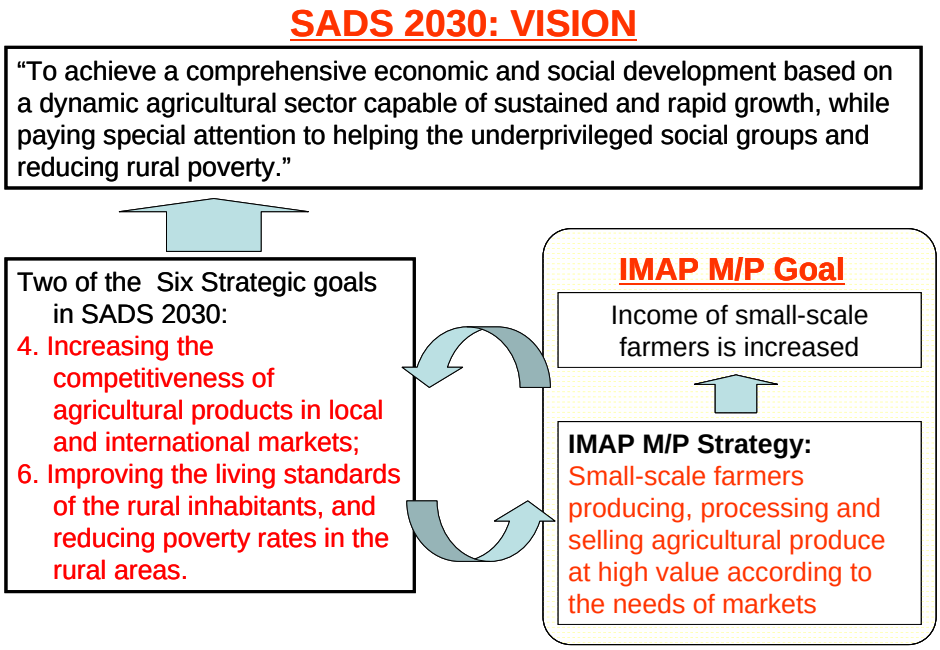


Figure 1.3.1 Positioning of the Development Goal and Strategy of IMAP

1.3.2 Development Tactics

Under the strategy, the following tactics are set according to the stage of value chain, namely sales, post-harvest, and input/production.

Sales:	**acquiring market information to utilize for farming and sales/expanding market channel/adding value to produce**
Post-harvest:	**adding value to produce/reducing post-harvest loss/ improving quality of produce**
Input/Production:	**improving quality of produce/harvesting in off-season/ promoting profitable crops**

It is proposed that the Government's administration will assist the farmers in awareness creation (production for sale), cooperation, technology improvement (extension), improving access to finance, etc.

When the region is well-known as producing specialty crops and supplying quality produce stably, those marketing their agricultural produce will get an advantage to selling their produce. It is therefore aimed to establish and strengthen the region of specialty crops by improving the process from crop production, processing and sales, according to the needs of market, so the farmers would be involved more in processing and sales as well as production[8]. At the same time, promoting profitable horticultural crops to the small scale farmers as an option to increase their income is planned.

Improving the distribution environment in the region would also be effective to improve the marketing by the small scale farmers, namely establishing a wholesale market will improve the efficiency of the

[8] In Japan, the Ministry of Agriculture, Forestry and Fishery (MAFF) is promoting the "agriculture sector to be the 6th industry", that the farmers proactively participate in not only production (1st industry) but also processing (2nd industry) and sales (3rd industry) to obtain added value to their produce. 6th industry means that the farmers are engaged in 1st industry x 2nd industry x 3rd industry, hence it becomes 6th industry.

distribution system of agricultural produce, and also the market would contribute to pricing the produce, as it would be a signal to the producers and traders for their transactions. **"Improving the efficiency of distribution and pricing"** is therefore set as another development strategy. Improving and establishing wholesale markets in Minia and Assiut will be required. However, the responsibility for establishing and operating a wholesale market is not for MALR but for the Governorate. This M/P, therefore, refers to the infrastructure improvement as a related project.

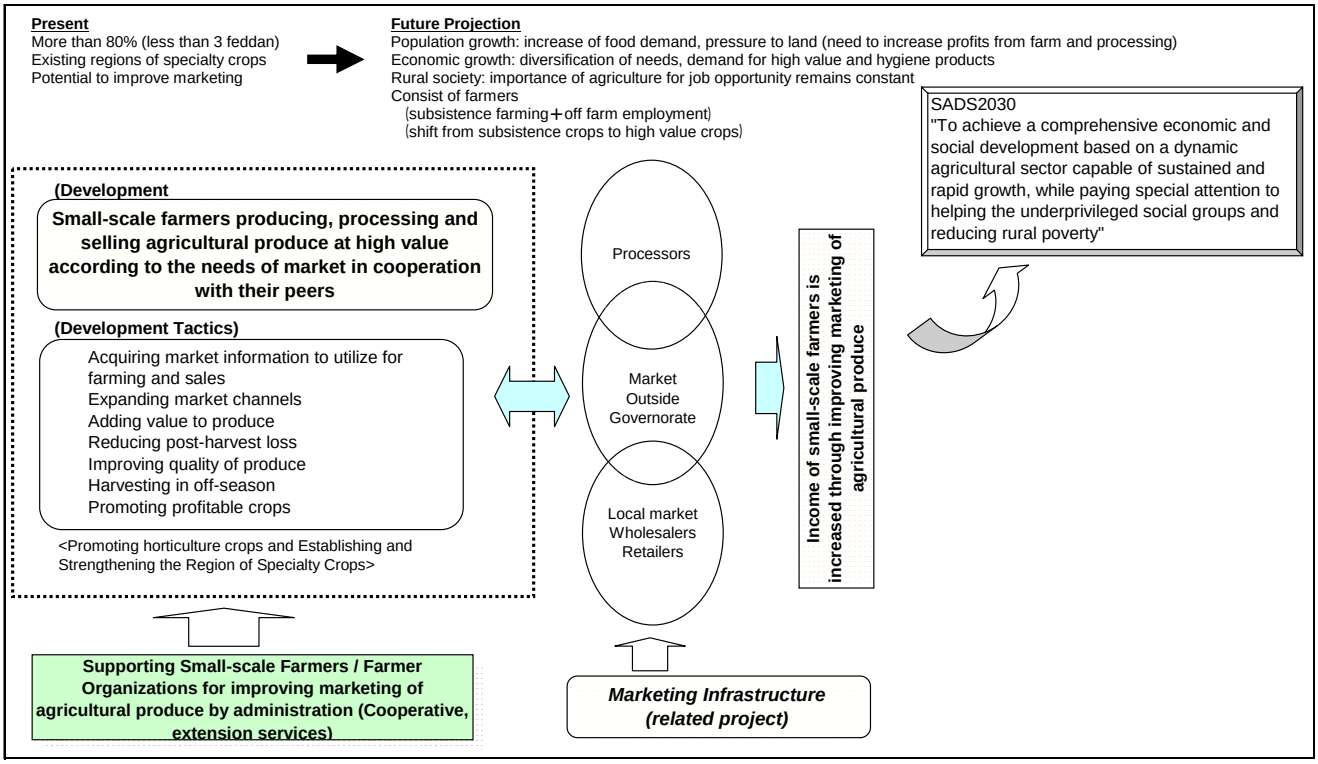


Figure 1.3.2 Development Approaches

1.3.3 Spatial Settings

Horticultural cropping is prevalant all over the Governorates, wheareas there are areas which have been established as specialty crop regions. The projects in this Master Plan basically cover the whole area of the Governorates. The major crops by region will be focused as each project is implemented.

Table 1.3.1 Spatial Settings in Minia Governorate

Northern (El-Edwa, Maghagha, Beni Mazer)	Central (Matai, Samallout, El-Minia)	Southern (Abo Korkus, Mallawe, Dayr Muas)	Whole Governorate
Onion, garlic Marjoram	Grape, potato (El-Minia),	Onion, garlic, vegetables, sugarcane and sugar beet	Tomato and other vegetables Medical & aromatic plants (most dominant is coriander)

Table 1.3.2 Spatial Settings in Assiut Governorate

Northern (Dayrut, El-Kosya, Man Floot, Assiut)	South Western (Abo Teag, Sadfa, El-Ghanayem)	South Eastern (Abnoub, El-Fath, Sahel Salem, El-Badary)	Whole Governorate
Tomato, Tomato Seedlings, Okra (Assiut), Water melon, Melon, Taro (Dayrut), Fennel (Man Floot), Grape, Citrus	Cow Pea, Fruits, vegetables	Basil (Abnoub), Fruits (Pomegranate, Citrus, Mango, Grape, Olive, Banana)	Vegetables (Tomato), Fruits

1.4 Time frame and Targets

Following the SADS 2030, the target year of the M/P is set as year 2030 and the starting year of the M/P is set from 2013. The Short Term and Mid & Long Term are respectively set as 5 years (2013 – 2017) and 13 years (2018 – 2030).

The targets shown on the table will be set as the output / outcome of the development projects described in the following sections. It is shown in the sections 1.4 and 2.4 of "Part II the Project Governorates" that the standard farm incomes of traditional cropping pattern in Minia and Assiut are 6,600LE/fed and 6,200LE/fed respectively. Since the most of the farmers in the Project Governorates are with less than 1 feddan of farmland, a farmer with 0.5 feddan is put as a model and the target income increase of the farm income is assumed at around 30%. The detail targets by project are shown in Chapter 3.

Table 1.4.1 Basis of the Project Governorates

Item	Minia	Assiut	Total (Average)
No. of Village Agr. Cooperative	342	250	592
No. of Farmers with less 3fed(2005)	250,340(86.6%)	339,466(89.2%)	589,806(88.1%)
Area of less than 3fed holdings	177,888fed (43.0%)	138,146fed (42.5%)	316.034fed (42.8%)
Income of Traditional Farming(*): Land owning farmer(0.5fed)	LE3,300/year	LE3,100/year	LE3,200/year

(*)Summer: maize; winter: wheat, berseem: the average land holding with less than 3 fed is 0.54fed, hence 0.5fed was applied as standard.

Table 1.4.2 The Targets of the M/P

	Short Term Plan	Mid & Long Term Plan
M/P Target Year	5 Years (2013－2017)	13 Years (2018－2030)
Targets	• Support 20 village agricultural cooperatives • Guide 1,100fed (2,300farmers) for value added agriculture • Support 25 post-harvest and agro-processing facility establishment (create job of 144 people)	• Support 100 village agricultural cooperatives • Guide 4,160fed (8,800farmers) for value added agriculture • Support 78 post-harvest and agro-processing facility establishment (create job of 432 people)
App. Project Cost	LE19,000,000	LE54,000,000
Income Increase	Ave. 900LE/year/0.5fed (30% increase)	Ave. 1,100LE/year/0.5fed (34% increase)

CHPATER 2 DEVELOPMENT PROJECTS

2.1 Formulation of Development Projects

Under the above development strategies and tactics, development projects are formulated. The development projects are based on the countermeasures for the issues of the present situation, categorized according to the stages of input/production, post-harvest and sales. The projects are organized along with the development strategies and tactics set to realize the development goal of the M/P. The following Table (2.1.1) shows the countermeasures for the issues:

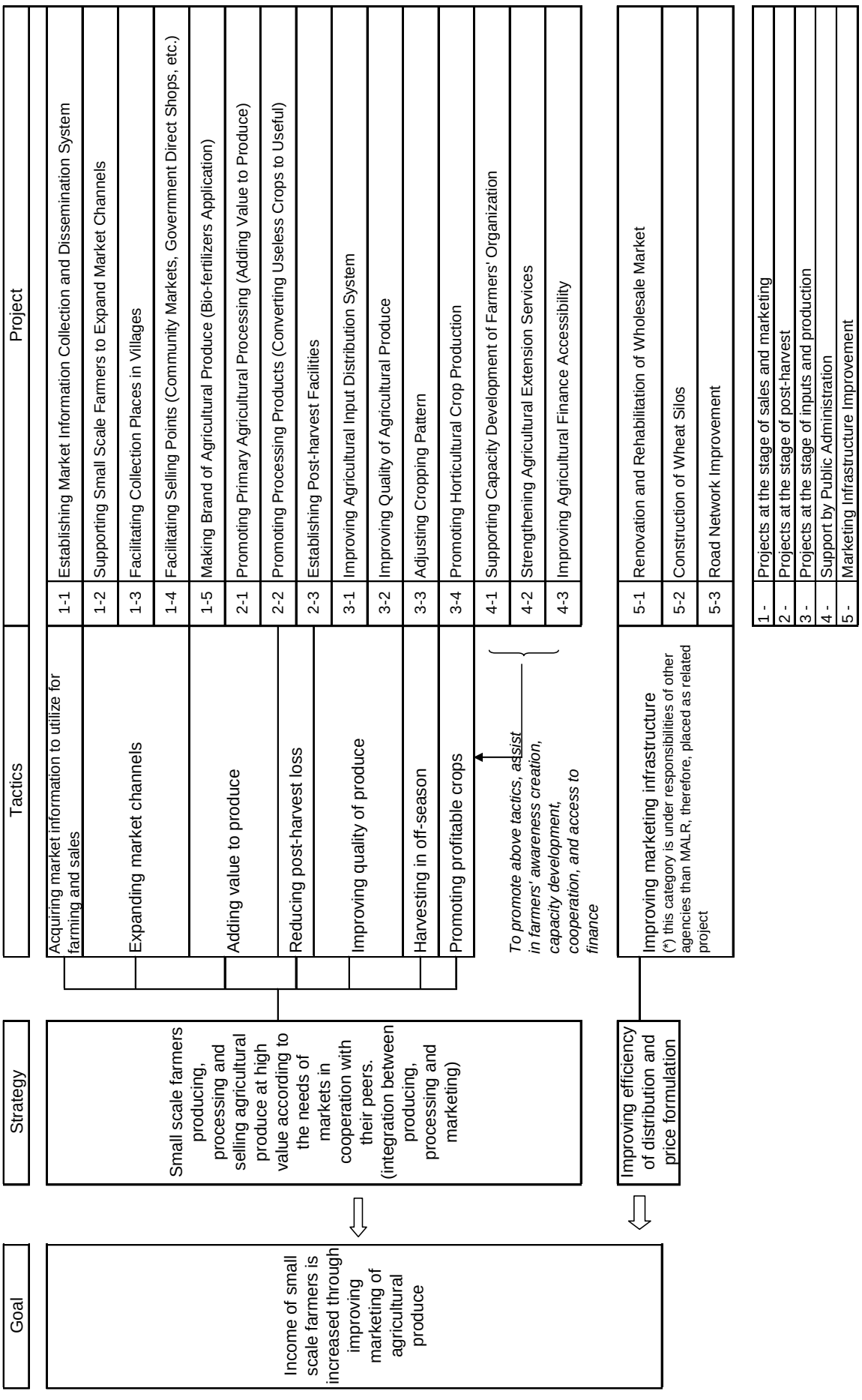
Table 2.1.1 Major issues and Countermeasures (Projects)

Category	Representative Challenges	Countermeasure (Project)
1.Marketing / Sales	Small scale farmers are difficult to get information for decision making (crops, inputs, timing, cultivation areas, etc.).	Providing market information to small scale farmers and Support small scale farmers to expand market channels
	Small scale farmers are difficult to be independent economically as a full-time farmer.	Providing information to small scale farmers Promoting horticulture crops
	Small scale farmers are difficult for continuous shipping with agreed amount and price.	Shipping in off-season, Support small scale farmers to expand market channels
	There is a huge gap between farmers' price and consumer price.	Establishment of marketing information system
	Distribution within the area and broad area are not efficient.	Support collection and distribution of produce in villages
2. Post-harvest	Processing industry is not developed in rural areas, and products in rural areas are less competitive than products from Cairo.	Promoting primary agricultural processing
		Promoting processing to convert useless crops to useful
	Post-harvest loss is huge, and that causes economical damage.	Establishment of post-harvest facilities.
3. Production	Quality of cash crops are degrading.	Seed and seeding production and distribution system improvement project
	There is no strong incentive for farmers to cultivate new horticulture crops.	Horticultural crop production promotion project
4. Farmers' Organizations, Agricultural Cooperatives, Extension, and Agricultural Finance	Agricultural cooperatives do not involve in economic activities.	Support capacity development of farmers' organization
	Demand for agricultural cooperatives are changing.	Support capacity development of farmers' organization
	Financial role of agricultural cooperatives are weak.	Improvement of financial accessibility
	Agricultural extension system is degraded.	Strengthening of extension services
5. Rural Society	There are lack of loan opportunities and collateral.	Improvement of financial accessibility
	Agricultural sale per farmer is small.	(remarks) Agricultural profitability through land profitability, job creation by agriculture (both men and women)
	There is a economic gap between upper Egypt and Delta region, and between urban area and rural area.	
	Education standard and literacy rate of middle age men and women are low.	

Improving the marketing infrastructure such as the wholesale market should be taken into consideration. These projects would be undertaken by agencies other than the MALR. Therefore, in this M/P, these projects are incorporated as related projects. These are the rehabilitation of the wholesale market, construction of wheat silos (reducing post-harvest loss) and road network improvement.

Figure 2.1.1 summarizes the development projects under the development goal, strategies and tactics. The following sections will describe the contents of the projects.

Figure 2.1.1 Development Frame



2.2 Improvement of Sales

2.2.1 Summary of Constraints and Potentials

The issues of sales of agricultural produce are summarized in the voice of small scale farmers saying that “they cannot sell their produce at good price”. Price fluctuation at the market due to the balance of supply and demand including the influence of the international market is one of the significant causes of price issue, but this section focuses on the system of sales by the small scale farmers.

Based on the workshops at villages, the field survey of the Study Team and the results of the Pilot Project, the following constraints relative to the selling system have been identified as: multiplicity of traders without value addition, deficiency of the marketing information system, weakness of marketing organization of farmers, physical condition, organization, facilities and marketing services of markets.

After the liberalization of the agricultural sector in the 1980’s, the business of trading agricultural produce has been developing and there have been a lot of small traders at the village level, too. These traders have an important role to deliver the produce from the farm to the market. However, the multiple transactions between the traders make the share of producers low; or another case is that few traders control the trade of produce and small scale farmers also rely on them so that their negotiation power becomes less.

There is lack of information for small scale farmers to seek for other channels of marketing and prices to make them feel fair. Collective activities of small scale farmers are rare in the present situation. The role of an agricultural cooperative for marketing has been declining since the liberalization, though the cooperative can engage in marketing activities according to the law. Before the liberalization policy, the village multi-purpose agricultural cooperative had been acting as a governmental agent to control the agricultural production. After the farmers became free to choose crops to grow, the function of the cooperative for marketing was also lost.

The current village multi-purpose agricultural cooperative basically deals with agriculture inputs, namely chemical fertilizers, pesticides, and seeds, whose supply has still been partly controlled by the Government. Apart from the multi-purpose cooperative, specialized cooperatives to be engaged in marketing have been established but their share of produce distribution is minor.

On the other hand, we also see the potential of improving the system of sales by small scale farmers. An existing cooperative and extension network throughout the rural area is still important as an agent of the supporting activities of the Government to the villages. Private companies for input supply use the system of cooperative and extension to sell their commodities. Existing regions of specialty crops in the Governorate attract the markets in Egypt and also in the foreign market. The increasing population in the Governorate provides a high demand for the agricultural produce. There are such opportunities for selling the produce at a good price in and outside the Governorate.

2.2.2 Assisting in Improving Sales

Based on the above constraints and potentials, the development program for supporting the improvement of sales/marketing are formulated. The following are the proposed Projects under this program:

Table 2.2.1 Summary of Constraints / Potential and Proposed Projects

Constraints and Potential	Projects
Insufficient market information for small scale farmers	Establishing Market Information System to collect and disseminate for small scale farmers
Multiplicity of traders /control of few traders	Supporting small scale farmers to expand market channels (support cooperative for marketing, or contract farming)
Weak organization for collective activities	
Existing organization network and specialty crops	
Existing collection and distribution facilities (there are public and private collection and distribution places and markets in the city and District, but there is room to improve e.g. in terms of hygiene)	Improving and establishing collection and distribution facility and community market

1-1 Establishing Market Information Collection and Dissemination System

This project is to establish a system to collect market information useful to the small scale farmers and disseminate it in an efficient way to the small scale farmers by the administration. Firstly, the information useful to the small scale farmers is assessed and the method of information collection is defined. Assumed information is the market price of major crops and specialty crops at the market in Assiut or Minia city and the list of buyers including traders, processing companies, and exporters, etc. With the daily market price, the farmers would know the level of the consumer price and wholesale price in the market so that they could refer to it when they negotiate with traders on their transaction. A list of buyers would help farmers find buyers who could buy their produce with better conditions.

The collection of market price information requires assignment of a staff to receive information from the wholesalers and retailers in the market every day. As for the list of buyers, the District Cooperative conducts surveys for local buyers and the Governorate searches for amicable buyers through its system. Personal computers for data base preparation would be required. Information distribution would be carried out through the ordinary line of the Agriculture Directorate, namely, from the Governorate Agriculture Directorate to the District Agriculture Office and then to village cooperatives. Also an SMS system of mobiles can be utilized. Information could be sent at once to the numbers of cooperatives after which they could put the information on a public billboard. Village cooperative works as the terminal outlet to the farmers, and the delegated officer and extension engineers are posted in the village cooperatives. Hence they are to work together for the information collection and dissemination.

This activity is planned to combine with the Mobile Extension Services, which was launched in 2011 between the ARC/CAAE (Central Administration for Agricultural extension) and the private mobile companies. At the Governorate level, the Agricultural extension Sector has started collecting the market prices of major crops in selected local markets since 2011. Collection of price data can also be delegated to the initiative of the Agricultural extension Sector.

MALR launched the Mobile Extension Service in cooperation with the companies Vodafone and Quick Serve in June 2011. Vodafone plans to distribute SIM cards to one million farmers and the Ministry sends information about cultivation technology by crop to the SIM holders free of charge. Also, a free hotline about the cultivation technology will be established. For this project, MALR does not allocate a special budget; instead, the private companies are investing in this project as public-private-partnership. The private companies can obtain the contents to provide to the customers from MALR which can contribute to increasing the number of their customers. Also this can be considered as the activity for Company's Social Responsibility (CSR). This

public-private-partnership is realized as it brings benefit for both sides: MALR can utilize SMS as a channel of extension service without allocating much budget and the companies can increase their customers by attracting them with the useful contents.

Mobile Extension Services mainly deals with the cultivation technology, but by adding the price information to this service, it will make it possible to send the price information to a large number of farmers in a wide region. The head of the Central Administration for Agricultural extension has positively responded to this idea. Not only SMS, but also other media such as TV broadcasts should be taken into consideration. As well as SMS utilization, MALR has also started a TV channel for agriculture information, in which wholesale price information of Obour in Cairo and Hadra in Alexandria are shown on the channel. Wide dissemination of information should occur through such multiple media sources.

In mid and long term, the establishment of an information center will be considered. The information center can serve as a library where the farmers can seek information they want. Through the information collection and dissemination activities, the database will be accessed by the users through PCs. And the Center will be equipped with computer units, so that the users come and look for necessary information they want through the internet. The Center would be established at governorate and district levels to easily reach out to the farmers in rural areas.

1-2 Supporting Small Scale Farmers to Expand Market Channels

Expanding market channels for small scale farmers would help them for fair negotiation to sell their produce and also give the possibility to sell their produce at good prices. To expand the market channels of small scale farmers, it is proposed to revitalize the agricultural cooperative for marketing. NGOs either as independent or in cooperation with international donors have been trying to organize a farmers' association to connect them to buyers. But an agricultural cooperative is still the key agent for the Government. Therefore, the Government support to the farmers should start with cooperative.

Furthermore, an agricultural cooperative together with agricultural extension services have had a wide network in the villages, especially a village multi-purpose cooperative which is posted in each village attached with extension engineers. Although their current role is concentrated on the input procurement and land registration, the cooperative can take part in marketing activities according to the Agricultural Cooperative Law No. 122 (Year 1980).

For this activity, the cooperative will contract with farmers in their village to collect and sell the produce. The farmer is not necessarily the member of the cooperative as long as they agree with the condition. At the harvesting period, the cooperative will collect the produce and transport the produce by truck which the cooperative is to hire. After selling the produce, the cooperative takes a commission and the rest of the profit will be paid to the farmers.

After the liberalization policy of agricultural production and marketing in the 1980's, the private sector for marketing has been well developed and the farmers are easily able to sell their produce individually. This may have been attributed to the ceasing of the role of the agricultural cooperative for marketing. Also the village cooperative was not accepting marketing of produce as their role after the liberalization policy and the farmers prefer to choose freely where to sell their produce. Meanwhile, the establishment of a specialized cooperative for marketing has emerged since the 1980's. These specialized cooperatives are engaged in marketing activities for their special crops though their share in the market is minor.

Historically, the agricultural cooperative in Egypt had been an agent to control the crop production and marketing by the 1970's. From such a background of the cooperative, it is required for them to build the trust of the farmers in the village and revitalize the organization in order to make the cooperative get into the field of marketing again. It is also necessary to consider again what would be the advantage for the cooperative to revitalize for marketing. For the small scale farmers to enjoy the scale-merit of economy by collective production and shipping, it would still be significant that the village multi-purpose agricultural cooperative get into the marketing of agricultural produce again.

As for the activity of the specialized cooperative in Minia, namely the Agricultural cooperative for Finance, established in 2010, they work with a basis of contract farming prior to cultivation. This arrangement seems as the core of their activity to be effective. The cooperative was established to make contract farming on behalf of the farmers with private companies. The board members of this new cooperative have had experience of contract farming through the assistance of the NGO CEOSS. This cooperative is just like a child of the CEOSS to give success to the role of the NGO, but as the cooperative. This would be an example of a role for the new specialized cooperative.

If the village agricultural cooperative tried to engage in collective shipping of agricultural produce, they would need such an arrangement for success as securing where to sell, i.e. contract farming, giving low interest finance to farmers as the finance by the traders/middlemen to the farmers prior to cultivation has been prevalent. For this arrangement, the cooperative would need to make use of the asset of the cooperative. Food companies are eager to secure the stable supply of safe produce. As the small scale farmers are the majority of the agricultural producers in the whole country, the companies have an interest in engaging contract farming with small scale farmers. Hence it is proposed that the village multi-purpose agricultural cooperative also be the window of the private companies to seek for the group of farmers to get into contract farming. It is also proposed to establish a fund for price stabilization to make the farm-gate price consistent over the years.

In the mid and long term, it is proposed to develop an advanced cooperative to get into more variety of business, including grading and packaging. A center for Post-harvest and Marketing run by the cooperative is proposed. This would be a specialized cooperative activity or union level of District cooperatives. The box illustrates a model of an advanced cooperative.

A model of an Advanced Cooperative:

To activate the role of a cooperative to market the farmer's production according to Item No. 4/11 of the Agricultural Cooperation Law No.122 (for Year 1980),
1) The cooperative makes contracts with farmers to cultivate varieties of vegetables,
2) The cooperative provides (seeds, seedlings, fertilizer, pesticides),
3) The cooperative provides research and extension serves for farmers,
4) The cooperative establishes a center with refrigerator, grading and packaging unit, shop to sell seeds and seedlings, shop to sell fertilizer and pesticide, extension office, pickles unit, tomato source unit, drying unit. The waste is transformed to compost factory,
5) The management of the center is made with schedule for market needs,
6) The cooperative makes meeting with farmers who made contracts with cooperatives to give them the schedule and distributes the market needs to everyone.
7) The cooperative provides training to farmers to packaging, grading directly after harvesting to keep the vegetables fresh, speed circulation and to add codes for each farms on each package.
8) Vegetables are distributed by mobile market (motorcycles) with graduated youth and each (motorcycles) determines place, the local unit. Police and road and traffic personnel decide on these places. At the end of the day, every youth return the remaining vegetables to store it if it's still in good condition to sell it on the second day or processing it if it is not fresh. If it is in a bad condition they will execute it or transform it to the compost factory. If the production is more than the local market needs, the cooperative sells it at the big wholesale market in Egypt (6th Oct. market, Obour market, Alex market).

1-3 Facilitating Collection Places in Villages

To help small scale farmers organize themselves to collect their produce and sell together, it is proposed to furnish collection places in the villages. Basically farmers would not mix up their produce from others. But for small scale farmers, the amount of their produce would be so small that when they gather at one place with their produce, the traders could take the bulk of produce. Collecting their produce at one place, the small scale farmers could be able to sell their produce more easily to the traders. The place can be used for a community market where local women can get some vegetables from their village and sell to the villagers as proposed below. Such a collection place will be set using the space of a village cooperative if available. If not, cooperation with the Governorate/local unit would be required to acquire the land for it.

There are already existing collection places run by the private sector. They rent a corner of farmland along the main road and use the place for collection and shipping of the agricultural produce. In this M/P, it is planned to establish the collection place to be managed by the village agricultural cooperative along with the above activity of expanding market channels for small scale farmers.

1-4 Facilitating Selling Points (Community Market, Government Direct Shop)

Establishing a community market and direct shop is proposed in order to facilitate for selling the produce at the local market. In the villages where horticultural crops are not grown much, the villagers are purchasing vegetables from outside the village. Due to the multiplicity of traders, buying vegetables outside inflates the price of produce. If they can sell the vegetables produced at the village more in the village, the outflow of the cash from the village could be minimized and the farmers trying to cultivate horticultural crops can easily find the places to sell. This community market facilitation is also a measure to expand the market channels to the small scale farmers.

There are very often cases when the rural women form a market place for vegetables along the road. In these cases, it is planned to pave the village road, which is also used as a market place in order to improve the hygienic condition so that the sales of the produce there could be expected to increase. In case there is a place owned by the village cooperative, that place can be used for the market place where they could be concrete pavement.

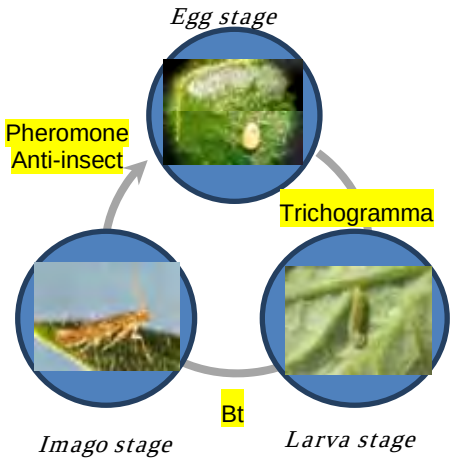
As for direct shop facilitation, it is planned to establish a direct shop at the village cooperative and district agriculture office and to promote the high quality agricultural produce or processing products which will be planned below by selling at the direct shops. There is already a direct shop at Minia and Assiut Agriculture Directorates. Also the District Agriculture Offices have been selling agricultural produce at the office though they do not have a specific shop in the office compound. Direct selling at these offices is planned to promote the sales of local produce.

1-5 Making a Brand of Agricultural Produce (Bio-fertilizers Application)

A bio-fertilizer using a microorganism is effective in its action and economic impact. Soils in both new and old lands along Nile Valley have a nature of pH7.5-9.0, which is caused by scatter of $CaCO_3$ and its reaction with OH-. In the condition of more than pH7.5, the plants cannot absorb minerals such as K, Fe, Mg and B from roots, and can be easily affected by pests due to malnutrition. The microorganisms contained in bio-fertilizer produce organic acids in the rhizosphere and help transform unavailable substances to available substances in soils.

As a result, farmers' incomes can be improved by bio-fertilizer and bio-control. The reasons can be summarized as: 1) the yields of crops increase by 20% or more compared with conventional farming

methods which prevail in Upper Egypt, if proper microorganisms are dosed along with the stages of plant growth, 2) demands of bio products (not complete organic products) from traders and consumers increase due to good taste; tomato, potato, etc., 3) input volume of chemical fertilizer can be reduced by 50% or more when using bio-fertilizer., 4) bio-control methods developed by the Lab are more effective than chemical pesticide (especially for the pest Tuta Absoluta) as well as being cheaper and safer.



Bio-control at each growing stage

As high quality products, bio-fertilizer and bio-control methods are very cost-effective. The Study Team conducted interviews after test sales of bio vegetables (non-chemical pesticide, manure + bio-fertilizer + bio-control), and the agricultural officers answered that a 20-30% of price increase is acceptable. Demands for safe vegetables can be met by more campaigning, advertising and other enlightenment activities with networking of producers, retailers and urban consumers. In fact, demands of organic agro-products are increasing in supermarkets in Cairo. For Upper Egypt, organic farming is more costly and difficult as recorded for small scale farmers due to inspection and registration by the organic farming certification organization. Therefore, it is recommended to promote the category of Clean Agro-produce (less use of chemical pesticide, application of bio-fertilizer and bio-control) by Agricultural Directorates.

For consumers, Agricultural Directorates officers should prepare strategies such as: 1) food safety, better taste and prolonged shelf life periods as customer value, 2) reasonable pricing as customer cost, 3) registration and inspection of retailers' shop as convenience, and 4) demonstration and enlightenment of food safety as communication. The officers of agricultural affairs are requested to select model farmers and farms to implement bio-fertilizer and bio-control and extension of their applying techniques. The officers of agricultural cooperatives are also requested as distribution frontline of bio materials. These functions as government initiatives are very meaningful.

To promote making a brand of Clean Agro-produce, establishing a standard of bio-fertilizer application, and a management strategy of knowing, understanding, planning, measuring, monitoring, and record-keeping at each step of the production process, i.e. adoption of Good Agricultural Practice (GAP) may result in illuminating problems and instructing the appropriate measures for maintaining the quality of food. This will be applied for Mid & Long term.

Table 2.2.2 Summary of Projects for Improvement of Sales/Marketing

Project	Short term	Mid & Long term	Target products	Target Area
1-1 Establishing Market Information Collection and Dissemination System	• Designing system of information collection and dissemination • Implementation by public-private partnership	• Establishing Information Center	Main crops	Selected places for mid and long term: whole target area
1-2 Support for Expanding Market Channels	• Investigation of buyers by the cooperative • Facilitating contract farming • Facilitating cooperative to provide soft loan for input procurement to the farmers	• Contract farming by cooperative • To develop advanced agricultural cooperative to run post-harvest and marketing center e.g. grading and packaging.	Potatoes, Onion, Garlic, Grapes, Others: fruits, root crops. For long term: All products including cereals	Selected places in short term and expand the sites to whole area in mid and long term
1-3Facilitating Collection Place in Villages	• Assessment of the collection place • Constructing collection place in the villages run y cooperative	• Extending the area • To develop the collection place to post-harvest center e.g. grading, packaging and storing	Horticultural crops	Area with horticulture promotion area
1-4 Facilitating Selling Points (Community Market/Direct Shop)	• Assessment of the village market • Community market facilitation (multi-purpose village road, cooperative premise) • Direct shop facilitation	• Extending the area	Horticultural crops	Area with horticulture promotion area
1-5 Making Brand of Agricultural Produce	• Promoting brand of agricultural produce using bio-fertilizers	• GAP establishment, expanding in wide area (New Land etc.)	Horticulture	Expand from the selected area to the wide area in Mid & Long Term

2.3 Post-harvest Processing

2.3.1 Summary of Constraints and Potentials

In the Project area, post-harvest processing for agricultural produce has been developed step by step to meet the demand by improving the traditional styles. As the free market was introduced in the 1980s, the distribution system and market transaction have been weak. Regarding the post-harvest processing, as the development is not controlled and hindered by the imbalance between demand and supply, many constraints have occurred, especially for the small scale farmers who are affected by them and obliged to live in poor conditions. However the Project area has specific characteristics and potentials. The following table summarizes the constraints and potentials for the post-harvest processing.

Table 2.3.1 Summary of Constraints and Potentials for Post-harvest Processing

Constraints	Potentials
・ Heavy labors are put to the harvesting work. Introduction of harvesting machine is a preliminary stage, and almost all harvesting work is still conducted manually. ・ Products are little processed and sold without any value addition. ・ As farmland is very narrow and products are not a large volume, it is difficult to introduce the processing equipment and facility. ・ The products like tomato are over supplied in the season and the price is heavily going down, therefore, the products are not harvested and left in the field. And heavy losses occur during the collecting and distributing stages. ・ As some medical and aromatic plants like basil are dried to sell, large quality and quantity losses happen because of the drying of the bare ground. ・ Since the technology transfer has not yet been disseminated, the products are sold without value addition. ・ As the private food companies and feed factories are limited, products in the area are transported to far places.	・ There is the possibility to expand the harvesting period by introduction of new variety and planting technology. It is also expected to introduce the mechanization. ・ There is a possibility to add the value of products by using the simple post harvest processing equipment and facilities to sell as well as home consumption. ・ As the many kinds of crops can be harvested in the area, processed volume can be increased for whole-year operation by the farmers with smaller equipment and facilities. ・ Introduction of drying facilities would be effective to be operated by farmers for increment of quality and quantity. ・ Since the agricultural research center and institutes have promoted the processing of agricultural products, the technologies of them would be able to be disseminated through the agricultural cooperative and extension. ・ As the investment of private processing companies are increasing step by step, and reaching Fayum and its scales become large, the products in the area can be sold there in the near future. In the future, as there are industrial areas in the target area and the quality and quantity products would be supplied stably in all seasons, it is expected to shorten the marketing route by means of the private companies that would come to install the processing facilities.

2.3.2 Improving Post-harvest Processing

2-1 Promoting Primary Agricultural Processing (Adding Value to Produce)

In the Project area, many specialty crops are produced. As the over-supply in the season causes the price decline, farmers are obliged to sell them at low prices. Moreover, since the multilayered traders are involving the transaction after the free market was applied, farmers' incomes are lower and lower under the unfair price setting. In such situations, there are high potentials for the promotion of time-lag production and food processing by the farmers. The proposed project aims to add the value of products to sell them by using the preliminary processing facilities for farmers to collect their product from their fields, taking supply into consideration. As preliminary processing such as pickling or drying vegetables can use various agricultural products as raw materials, it may be considered that many farmers groups might be required. Also the cooperative support for electing the facilities is required, selecting the agricultural products for yearly facility operation and establishing the farmers' groups. The concept of this proposed project is for farmers to cooperate, process products, and sell the produce with the support and instructions of the cooperative.

In mid and long term, it is expected to make higher quality produce gradually, following the GAP planting and applying GIP for quality control and the HACCP hygiene control with the area expansion and specialty crops promotion.

2-2 Promoting Processing Products Project (Converting Useless Crops to Useful Ones)

Tomato is sold vastly in the Project area, and in the season, it is oversupplied, so the price goes down

heavily and rapidly. Therefore, farmers do not harvest them and leave them in the field. In the off-season however, the price goes up quite high, more than five times. On the other hand, there is damage and a lot of loss at the working stages of harvesting, handling, loading and unloading. It is expected to introduce and extend the time lag planting as well as install the processing facility to reduce such situations.

In southeastern Assiut, pomegranate is widely planted. Farmers sell it to traders but have to accept the low price of crops because of lack of grading. Pomegranate is graded in 5 classes, and grade 4 and 5 may be thrown away because of no-marketing and quite a low price. Grade 4/5 pomegranate is no different from that of high grades. Usually, people in Egypt prefer to chew the inside seed fruit and suck the juice of it, not to drink juice only. It is considered useful for farmers to install simple processing equipment and facility for seed packaging. The concept of the proposed project is for farmers to convert the useless crops to useful produce, cooperating with the cooperative. However, it should be taken into consideration to yearly operate the equipment and facility as long as possible, because short operation makes the annual cost high and the benefit low. Therefore, other simple processing such as dried or frozen vegetable manufacturing should be conducted using the same equipment and facility in the off-season of a target crop such as tomato or pomegranate.

Tomato paste maker/refrigerator to preserve the products

In the mid and long term, promoting high quality foods and establishing a specialty crops area with the promotion of GAP, GIP and HACCP control in target areas is expected.

2-3 Establishing Post-harvest Facilities

In north central Minia and in eastern Assiut, marjoram and basil have been widely cultivated. Farmers have to dry the crops to sell because the traders take dried crops, not fresh. Drying by sunshine requires a large drying area, and if there is no place, farmers share their precious crop field for drying. Drying on the bare ground with direct sunshine causes a heavily lower selling price for farmers by means of a large processing loss and low quality.

Example: basil dry yard (lay directly on the ground)
1 week to dry, considerable loss, less quality

An Option of Improvement

Improved dry yard (floor paved and using qafas)
3 days to dry, reduction of loss, better quality

An Option of Improving Drying Process

Also, the distribution channels are very limited and there are only traders to come into the village to buy. It is expected for farmers to add to the value by proper drying and simple processing and to sell not only to traders but also to processing companies in Fayum, Cairo and Alexandria. The concept of the proposed project is to improve the distribution channels for farmers cooperating with the cooperative to reduce the loss and add value to sell at a good price.

In the mid and long term, it is expected to enlarge the capacity and effectively use the processing facility and expand the cooperative activities. Proposed crops are basil in south eastern Assiut, mint and marjoram in northern and central Minia, and other medical and aromatic plants in specific whole areas in Governorates.

Table 2.3.2 Summary of Projects for Post-Harvest Processing

Project	Short term	Mid & Long term	Target products	Target Area
2-1 Promoting Primary Agricultural Processing (Adding Value to Produce)	• Establish pickles making unit and marketing • Dried or frozen vegetables making unit and marketing	• Making higher quality produces • Promote production areas • Collect GAP products • Promote GIP quality control. • Promote HACCP hygiene control	Onion, Carrot, Lemon, Olive, Others	For short term: Onion, carrot, etc. For long term: Specific crops in special areas
2-3 Promoting Processing Products (Converting Useless Crops to Useful ones)	• Processing of tomato • Processing of pomegranate • Combination with the frozen or dried vegetable making • Combination with juice or jam making	• Promotion of high quality foods • Establishment of specialty crops • Collection of GAP products • Promotion of GIP control • Promotion of HACCP control	Tomato Pomegranate Mango Orange Others	For short term: Tomato in southern Minia Pomegranate in southeastern Assiut For long term: Specific crops in special areas
2-2 Establishing Post-harvest Facilities	• Improvement of processing for specialty crops • Establishment of farmers group	• Enlarge and operate effectively the processing facility • Strength and expand the cooperative activities	Basil Mint Marjoram Other medical and aromatic plants	For short term: Basil in northeastern Assiut, north, central in Minia For mid & long term: Specific areas

2.4 Inputs and Production Improvement

2.4.1 Summary of Constraints and Potentials

Potentials and constraints in the aspects of agricultural development related to marketing improvement are summarized below, together with development policies recommended.

Table 2.4.1 Summary of Constraints and Potentials and Development Policy

Potentials and Constraints	Development Policy
Production and Distribution of Seeds and Seedlings	
• Production of certified seeds and seedlings is so limited, so that farmers can not access them easily. • Private companies deal with seeds and seedlings of crops, except major traditional crops, under certain control of the government. • As seeds of some crops are produced by farmers, quality of crops become low by crossbreed. • Production of vegetable seedlings is very limited.	• Quality improvement by using certified seeds and seedlings shall be promoted by the government. • Access to certified seeds and seedlings shall be improved by production and distribution system of them • Certain amount of seedlings of vegetables and fruits shall be produced by agricultural research center in the governorate to support small scale producers.
Distribution of Fertilizers and Agro-chemicals	
• Prices of chemical fertilizers increase due to change in supporting policy by the government. • Chemical fertilizers are difficult to be procured by farmers because their distribution system is changed. • Kinds of chemical fertilizers are limited for small scale farmers. • Farm yard manure is commonly used by farmers at certain level. • Some bio-fertilizers are developed by universities and private firms. • Farmers can not use suitable agro-chemicals due to underdeveloped inspection and distribution system of them.	• Distribution system of chemical fertilizers shall be set up orderly to realize fair prices. • Inspection system of imported agro-chemicals to keep certain quality. • Various kinds of fertilizers and agro-chemicals shall be marketed to use suitable ones at each growth stage of crops. • Prospect system of pests and diseases shall be strengthened, and technical guidance of proper use of agro-chemicals shall be strengthened. • Efficiency and effectiveness of farm yard manure made by farmers shall be improved.
Quality of Products	
• There are no quality standards of agricultural products. • Grading of agricultural products is insufficient at farmer's level. • Trading conditions vary by quality, and prices of low-grade products are extremely low. • Information of agricultural technologies development by research institutes is not fully used at farmer's level.	• Agricultural extension services shall be strengthened to improve quality of products. • Trading of materials necessary for quality improvement shall be supported to expand. • Quality standards of agricultural products shall be prepared by the government. • Collection and shipping facilities shall be operated by producers' groups under necessary support by the government.
Control of Harvesting Times	
• Prices of vegetables and fruits fluctuate significantly by season. • Harvest season of crops is earlier than the Delta region due to higher temperature. • Cropping types in the summer season is limited due to extremely high temperature.	• Cropping types targeting at high price in off-season shall be established. • Year-round production of certain crops shall be established. • Vegetable production using greenhouses enables for different cropping type.
Promotion of Horticultural Crops Production	
• Farmers prefer to cultivate traditional crops even though farm size is small. • Some vegetables, fruits and medial and aromatic plants are produced in certain areas. • Production cost of horticultural crops is generally higher than traditional crops. • There are higher risks in production and marketing of horticultural crops. • Productivity and quality of horticultural crops differs by technical level in cultivation.	• Distribution system of farm inputs such as seeds and seedlings shall be properly developed. • Technical guidance of horticulture shall be provided to farmers, taking requirements of consumers into account. • Crop diversification shall be promoted to reduce risks on horticultural crops. • Agricultural credit services shall be strengthened for promotion of horticultural crops production.

2.4.2 Inputs and Production Improvement

This program, whose objective is improvement of the distribution system of farm inputs and a strengthening of the agricultural production system as mentioned above, is implemented in line with the following five projects.

3-1 Improving Agricultural Input Distribution System

1) Improving Seed and Seedling Production and Distribution System

This project shall promote use of advantageous varieties and certified seeds and seedlings in production of vegetables, fruits and medical and aromatic plants. At first, advantages of certified seeds and seedlings of suitable cultivars shall be recognized by producers through demonstrations and intensive technical guidance, then a distribution system of them shall be established properly. In mid- or long-term, quality and varieties of vegetable seedlings distributed by some individual producers shall be improved through proper supervision of the government. At the same time, it is recommended that public agencies, such as Agricultural Research Center in a governorate shall produce and provide quality seeds and seedlings for small scale farmers.

The government agricultural extension service is usually limited for major field crops only. As the marketing channel of production materials of horticultural crops is limited, small-scale farmers cannot access easily to the marketing system. In fact, many inputs for the demonstration farms were procured from reliable traders, producers or research institutes located outside of the Governorate. Access to various farm inputs shall be improved for common farmers. Regarding vegetable seedlings, the Minia Governorate Agriculture Directorate produced some amount for the public, but Assiut does not produce yet. As the Assiut staffs performed very well in tomato seedling preparation for the demonstration, the system of seedling production and distribution shall be established to promote horticulture in Assiut.

2) Improving the Fertilizer and Agro-chemical Distribution System

In general, productivity, quality and profitability of horticultural crops differ widely with the producer’s technical level in the fertilizer and agro-chemical application method. In mid- and long term, such farm inputs with appropriate quality shall be accessed by producers at reasonable prices as well as at the right time through proper inspection by the government and support to the distribution system. In the short-term, technical guidance shall be strengthened in the field of compost application using crop residue effectively in order to maintain or improve soil fertility. Some bio-fertilizers, which are developed by various agencies, are also examined for their effects and promoted to farmers gradually. As for plant protection, agricultural extension services shall be strengthened to improve farmers' skills in pest and disease control. Furthermore, the extension offices shall establish as an effective system for the forecasting of occurrences to minimize damages by pests and diseases in mid- and long-term projects.

3) Improving the Bio-materials Distribution System

In order to lower the prices of materials for bio-fertilizer and bio-control, it is necessary to improve the distribution system. For example, in the Matai District, Minia Governorate , the district director and extension officers have established a ‘Bio Shop’ at the district level to provide information of organic farming and sell bio-fertilizer and products of safe foods. Furthermore, they coordinate distribution of bio-fertilizer with private farm-input shops at the village level. This networking with the district

extension, bio-fertilizer producer, village dealers and farmers will be one of distribution models. In El Ansar, El-Kosya District, Assiut Governorate, the benefitted farmer provides information of bio-control to villagers, so they can purchase jointly. Some farmers in other villages testify about an unreliable relationship with private dealers, so they prefer to purchase through village agricultural cooperatives. In the future, the distribution system of bio materials can be constructed by the most efficient and reliable channels from extension officers, agricultural cooperatives, private dealers, or contracted agents.

4) Bio-control (Urgent Measures for Tuta Absoluta)

The most dangerous pest, Tuta absoluta, has been spreading year by year from South America to South Europe, the Middle East, Southwest Asia, North Africa and East Africa since 2009. Due to this, some countries have ordered to ban fresh tomatoes. In this pilot project, material such as anti-insect and Bacillus thurigiensis (Bt) were produced by the Central Lab of Organic Agriculture, but they are costly due to transportation from Cairo. The Lab has its branch in the Abnoub District, Assiut Governorate, and it is recommended to produce it in Assiut. For the parasite bee, trichogramma, the Assiut agricultural directorate has been producing for cotton originally. All materials for bio-control should be produced in Assiut and constructed urgently under the supervision of the Lab researchers.

3-3 Improving Quality of Agricultural Produce

This project aims at quality improvement of horticultural crops, as trading conditions of them are strongly dependent on their quality. At first, agricultural extension services shall be strengthened in the field of quality improvement techniques through intensive training for extension officers and demonstration to farmers. In mid- and long-term, a distribution system of necessary materials shall be improved under certain support by the government. On the other hand, producers shall implement grading and sorting of their products to meet the market demand, and the government shall support them for the establishment of collective shipping facilities. In long-term, it is recommended that the government shall establish a quality standard of agricultural products to stabilize trading conditions between producers and traders.

3-4 Adjusting Cropping Pattern

This project promotes various cropping types for off-season shipping, because prices of horticultural crops fluctuate significantly by years and by seasons. For this purpose, it is proposed that technical guidance of new cropping types, for example intercropping of horticultural crops with heat-protection crops, shall be provided to farmers through demonstration farms. Greenhouse and tunnel farming systems are also recommended to be promoted under certain technical and financial assistance. In mid- and long-term, a year-round production system of certain crops shall be established to stabilize their prices.

3-5 Promoting Horticultural Crop Production

This project is to establish strong agricultural extension services of horticultural crops based on market information, as profitability of them greatly depends on demand and market circumstances. For this purpose, the extension service agency shall promote production of high-demand crops, and guide crop diversification to reduce marketing risk. In mid- and long-term, producers' selection range of agricultural inputs shall be expanded

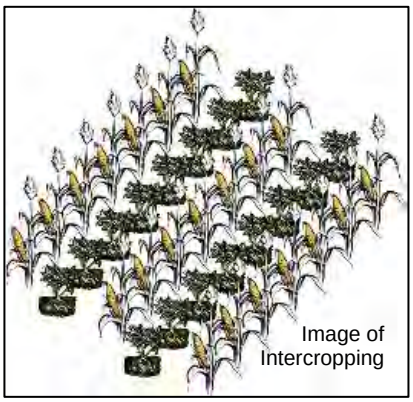


Image of Intercropping

through proper arrangement of their distribution system. In addition, the agricultural credit system shall be strengthened to improve access from producers of horticultural crops.

Table 2.4.2 Summary of Projects for Inputs / Production Improvement

Project	Short term	Mid & Long term	Crops	Areas
3-1 Improving Agricultural Input Distribution System	• Demonstration and guidance of certified seeds and seedlings • Promotion of effective use of compost and farm yard manure, and bio-fertilizer • Strengthening of technical guidance on plant protection	• Improvement of production and distribution system of certified seeds and seedlings • Production of seeds and seedlings at agricultural research station in governorate • Strengthening of inspection system of imported agro-chemical • Improvement of distribution system of fertilizer and agro-chemical • Strengthening of forecasting of occurrence and guidance against pest and disease • Promotion of organic fertilizer/bio-fertilizer	Horticultural crops, such as onion and tomato Horticultural crops	All areas
3-2 Improving Quality of Agricultural Produce	• Strengthening of technical guidance on quality improvement • Support on collective shipping stations	• Establishment of public quality standard of agricultural product • Improvement of distribution system of necessary material	Horticultural crops, such as garlic, onion and pomegranate	All areas
3-3 Adjusting Cropping Pattern	• Introduction of new cropping type targeting at off-season market • Support on greenhouse farming	• Introduction of year-round production system of certain crops	Horticultural crops, such as tomato and potato	All areas
3-4 Promoting Horticultural Crop Production	• Strengthening of extension services on horticultural crops based on market information • Promotion of crop diversification	• Improvement of distribution system of necessary farming materials • Strengthening of agricultural credit system	Horticultural crops	All areas

2.5 Strengthening of Farmers' Organizations for Improving Agricultural Marketing

2.5.1 Supporting Capacity Development of Farmers' Organizations

Issues and proposed projects relative to the farmers' organizations, particularly agricultural cooperatives, have been addressed in describing the above projects. In this section, the supporting activities of farmers' organizations by the Government administration, namely MALR, are summarized in accordance with the above proposed projects. The strengthening of a farmers' organization cannot be fulfilled alone without any objective activities and therefore, the activities to strengthen the organizations should be proposed by project. Table 2.5.1 summarizes the supporting activities of farmers' organizations.

Table 2.5.1 Supporting Activities of Farmers' Organizations

Project			Agricultural Cooperative	Farmers' Group
Sales	1-1	Market Information Collection and Dissemination	Technical guidance for collection and dissemination of information	-
	1-2	Support for Expanding Market Channels	Guiance and training for cooperative to engage in collection and shipping the agricultural produce Seminar with private companies Study tour for successful instituions	Assist through cooperative to organize a group of farmers to produce and market varisous crops as informal group
	1-3	Facilitating Collection Place in village	Guidance and instruct cooperative to facilitate the place for collection of produce and operation of the place	- (any villagers could use the place)
	1-4	Facilitating Selling Points		
	1-5	Making Brand of Agricultural Produce	Guidance and instruct cooperative to facilitate the distribution of bio-fertilizers and assign extension	Assist organizing a group of farmers to produce clean agro-produce with bio-fertilizers
Post-harvest	2-1	Promoting Primary Agricultural Processing	Instruct cooperative to ientify their role (providing the place for processing, managing the facility with farmer group, etc.) Technical trainings for operating the facility Monitoring & evaluation	Assist through cooperative to organize a group of farmers as informal group Provide technical trainings through cooperative
	2-2	Promoting Converting Useless Crops to Useful		
	2-3	Establishing Post-harvest Facilities		
Inputs / Production	3-1	Agricultral Inputs Distribution System Improvement	Technical trainings to extension officers including ones posted to the cooperatives	Assist through extension to organize a group of farmers for technical guidance and demonstration activities
	3-2	Quality Improvement		
	3-3	Cropping Pattern Adjustment		
	3-4	Horticultural Crop Production Promotion		

Basically, the agricultural cooperatives will be the entrance to the small scale farmers in the villages, as they are supported from the government administration, especially from the General Directorate of Agricultural Cooperatives in the Governorate Agriculture Directorate. Therefore, the capacity development of agricultural cooperatives is primarily targeted. The major present function of the agricultural cooperatives is to collect information on land holding, certificating transfer of farmland ownership and endorsement for farmers to get financing. There are, however, cooperatives whose board members are eager to engage in economic activities. There is also a village cooperative, which has started operating a milk processing unit. Assisting the economic activities of agricultural cooperatives can be the target of strengthening farmers' organizations.

There are also farmers' associations that are normally registered with the Ministry of Social Solidarity. For the proposed projects under this M/P, there will be occasions to form a group of farmers, such as in demonstration activities, operation of processing facilities, etc. The proposed projects would assist forming a group of farmers at the beginning as an informal group to practice the proposed activities. It is expected that some of successful farmer groups would develop their initiative to be a formal one with clear objectives and prospects of improving their livelihood. This policy of strengthening groups of farmers to be registered associations will provide opportunities for farmers to develop their initiatives, not just make registration their sole objective.

MALR established ARDF to provide loans to agricultural cooperatives and individual farmers. The number of loans to agricultural cooperatives has been increasing recently. This situation indicates that existing agricultural cooperatives in the project area will also be able to have access to the ARDF, and they will support small scale farmers. If informal farmers' groups can act independently, formal farmers' associations seem to be established. In this case, Agricultural cooperatives play an important role of support for farmers' associations such as providing training by agricultural extension workers (agricultural technology, management of farming, and market information).

2.5.2 Role of Agricultural Cooperatives in Marketing

As mentioned above in the project of "1-2 Supporting Small Scale Farmers to Expand Market Channels", it is planned to strengthen the village agricultural cooperative to engage in collection and shipping of agricultural produce. A basil drying yard was constructed in the Arab El Kadadeh Village in the Assiut Governorate, and farmers sold their basil through the village cooperative. The village cooperative bought fresh, dried, and processed basil from farmers; as a result, they succeeded in selling high quality basil at high prices. From the example of the Salakos village, which is known for garlic production, it is suggested that the village cooperative act as one of the distributors in terms of garlic marketing. In fact, local people in the village prefer this idea rather than organizing local traders and producers. The following summarizes the future direction of cooperative involvement in distribution based on the pilot project experiences.

- Contract Farming: contract farming has already been tried with several projects and NGOs such as AERI Project of USAID/CARE and the CEOSS. The first thing to do is to learn lessons of these activities. If cooperatives promote contract farming, they need capital to buy produce from farmers. One of the main constraints of this activity is a financial weakness of cooperatives. To solve this problem, financial support for village cooperatives should be considered to provide assistance through district and governorate agriculture cooperation as well as other networks of cooperatives.

- Price Stabilization Fund: in response to the request of price stabilization, the Price Stabilization Fund is possibly established within cooperatives to mitigate the production risk. Cooperatives will buy produce from farmers at the same price as the market price. If the selling price is higher than buying price, the cooperative will keep the surplus in the cooperative account. In fact, this price stabilization fund is mentioned in the Strategy for the Development of Agricultural Cooperatives (2002-2017). Thus, inter-annual risk mitigation methods like a price stabilization fund should also be considered.

- Soft Loan Facility for Small Scale Farmers: traders lend money to small scale farmers to ensure the production, and this is quiet common in rural area. In this case, traders have an advantage in dealing. Small scale farmers have no choice, but accept the condition because most small scale farmers need financial support to cultivate crops. This situation indicates that cooperative marketing activity should bundle with financial services for small scale farmers. Cooperatives providing financial services, initial capital could be an issue. Once they start to provide loan, they could continue their activities by revolving the profits.

2.5.3 Approach to New Activities by Agricultural Cooperatives

Agricultural cooperatives in Egypt were organized in a top-down method, being different from the voluntary basis of working together with persons in order to achieve the same objectives. This method induced farmers to restrain their ideas and motivation. The approach to the future activities carried out by cooperatives has to make a determined effort to deal with the need to continually win in a competition against other enterprises in the market-oriented economic society in order to be appreciated by farmers and consumers.

According to the Sustainable Agricultural Development Strategy towards 2030, the Egyptian Government launched the agricultural policy on strengthening the farmer's organization, in particular the promotion of a new cooperative's model organized by volunteer farmers. In short term, with the

above proposed Projects, the capacity development of the agricultural cooperative will be carried out.

From the aspect of mid and long term development, the agricultural cooperative is desirable to develop as a comprehensive cooperative covering guidance of farm management and credit business. The contents of cooperative business are composed of the following:

- Procurement of Input Materials- To supply qualified input materials to farmers with low prices steadily through the mass purchase in accordance with the program.
- Managing Post-Harvest Facilities-To utilize storages and drying facilities collectively
- Marketing- To secure steady and high income for farmers by selling agricultural products with favorable prices according to planned production and shipment
- Guidance of Farm Management
  To guide farmers how to apply agricultural technologies and to manage agricultural business
  To prepare a regional agricultural plan and to train immediate successors to farmers
  To sustain agricultural development, taking into consideration environmental preservation
- Credit Business
  To receive selling costs of agricultural commodities
  To pay for purchasing input materials
  Window for using agricultural fund

2.6 Strengthening of Extension Services for Improving Agricultural Marketing

In summary of the constraints, appropriate and location specific technologies are not available in places where and when they are needed. In effect, the services provided by the governmental agricultural extension system are not to fill the gap between the needs of farmers and the available technology.

2.6.1 A View of Future Extension Services

While technological improvement of agricultural practices is necessary, it is hindered by limitations of devolved agricultural extension personnel. This is one of the bottlenecks by which farmers cannot reap the fruits of agricultural research and development. The sufficient delivery of extension services is attributed to many factors including shortage of budget, personnel, and capacity of the agricultural extension staffs. Given these circumstances, this project aims to develop an improved model of an agricultural extension system that efficiently responds to the needs of farmers and consequently expands the improved model so that livelihood of farmers nationwide would improve.

This project aims to develop an improved model of an agricultural extension system that efficiently responds to the needs of farmers and the market and consequently expands the improved model so that livelihood of farmers nationwide would improve. To attain this objective, the following project is proposed, focusing upon development of location specific adoption technologies and extension services based on site diagnosis.

2.6.2 Agricultural Extension Services Responding to Needs of Farmers and the Market

To carry out extension services responding to the needs of farmers and the market, location specific adoption technologies and extension services based on site diagnosis are required to be developed in parallel with capacity building of agricultural personnel. District and village agricultural extension personnel should have sufficient capability to provide extension services delivery as generalists and

need to consult extension specialists in the governorate in case problems could not be solved on sites or to get information through accessing to internet systems.

In order to strengthen on-site diagnosis technologies and to carry out extension services based on location specific adoption technologies, it is necessary to upgrade existing laboratories and equipment for analyzing soils and diseases.

This project consists of establishing on site-diagnosis, major crop yield evaluation, strengthening of farm business advisory services, and improving the decision-making skills and technical capacity of farmers as basic components. Trained extension personnel become major actors who carry out extension services for farmers and a governorate extension department will be in charge of monitoring and evaluation.

Extension services by the existing staffs are limited in mobilization of extension specialists and generalists under the current organizations. In order to complement this mobilization, it is necessary to utilize local resources. This project aims to strengthen a farmer-to-farmer extension mechanism through training of advanced farmers who are willing to cooperate.

2.7 Prospects for Improvement of Agricultural Finance Accessibility

2.7.1 Strategy for Improving Financial Accessibility

The main prospect for Agricultural Finance is to improve financial accessibility for marketing agricultural produce and improving the livelihood of small scale farmers.

Improvement of agricultural finance access for small scale farmers is one of the important things to improve marketing agricultural produce. It is necessary for farmers and Agricultural Cooperatives to get finances in order to sustain marketing improvement activities. As stated in the previous chapter, three main constraints were found in the current situation: high transaction cost, complicated loan procedures, and limited access to loans. Farmers who borrowed the money from village banks have to pay an extra cost on top of the lending charge and do not understand the terms of loans and detailed loan conditions.

Also, the BDACs are almost the only credit providers for small scale farmers. Some basil farmers in Assiut borrow the money from traders without any interest; however, this means that they do not have a chance to sell their products to any traders except money lenders. This situation indicates that most farmers do not have many options to get loans for effective marketing. These constraints discourage small scale farmers from producing profitable horticultural crops and specialty crops and investing in processing and marketing activities.

On the other hand, there is potential for stimulating investment and commercial crops. Not only does the PBDAC provide loans, but also the funds are available for small scale farmers and Agricultural Cooperatives such as the ARDF and the SFD. In addition, the SFD and the African Development Bank (AfDB) will implement a new loan scheme project for small scale farmers and farmers' associations. Furthermore, an agricultural cooperative (instead of village banks) in Minia has provided loans to their membership farmers. In fact, "Sustainable Agricultural Development Strategy Towards 2030" points out that one of the cooperatives' strengths is to be able to establish a fund of financing.

2.7.2 Linkage with Other Donor Activities

In Upper Egypt, there are a few donors planning to promote agribusiness through providing finance programs. These programs envisage that credit accessibility of small scale farmers, farmers' associations, and agricultural cooperatives will be enhanced. There are two main projects: Rural Income and Economic Enhancement Project (RIEEP) and Promotion of Rural Incomes through Market Enhancement Project (PRIME). Both of them are to improve livelihood in rural areas through promoting small and medium sized agribusiness.

(1) Rural Income and Economic Enhancement Project (RIEEP)

RIEEP is supported by the African Development Bank, and its total cost is $73 million for 5 years. The SFD is one of the main distributers of this credit. This Project consists of two components. One is providing loan programs to micro, and Small and Medium size Enterprises (SME). The other is a technical assistance program including capacity development of farmers' associations and financial institutions.

$70 million of the total project cost ($73 million) is allocated to the loan program component, and the remaining $3 million will be used for a technical assistance program. Also, the loan program is divided into an SME loan of $50 million and a Microcredit loan of $20 million.

Regarding the loan program component, there was an agreement between the SFD and the African Development Bank in October, 2011. The program has already started to accept loan applications, while the technical assistance program targeting the governorates of Minia, Assiut, and Sohag is still under preparation for value chain analysis (as of April, 2012). The following table shows the outline of loan program of this project. There are two types of loans: Microfinance and SME.

Table 2.7.1 Loan Program of RIEEP

	Microfinance	Small and Medium Enterprises
Maximum Amount	10,000LE (via NGOs) 50,000LE (via Banks)	2,000,000LE
Average Amount	3,000LE	60,000LE
Interest Rate	Depends on NGOs or Banks	9%
Loan Duration	3 to 5 years	

The SFD provides financial capital to NGOs and commercial banks, and these NGOs and banks provide loans directly to farmers and farmers' associations. The SFD charges these partnering financial institutions a market-based interest rate. Thus, the microfinance service will provide end borrowers through these NGOs and banks.

According to the project manger of the RIEEP, they already have contracted with three NGOs as partnership financial institutions, and one of them is in the Sohag Governorate. They also established partnership with the National Bank of Egypt to deliver their financial program, and they are still seeking for more partnerships with commercial banks.

SMEs also seem to be able to access to loan service with a low interest rate through the project. The RIEEP provides loans for SMEs with 9% interest; whereas commercial banks, in general, charge their clients 12% to 14%. Due to the advantage of the interest cost, they already have accepted more than 700 applications. Most of them are about livestock projects.

The RIEEP is regarded as a promising financial resource in the future. One of the main reasons for

this is that Upper Egypt is the prioritized area in this Project. 60% of the total resources are allocated to Upper Egypt. This means that people in Upper Egypt have more chances to have access to the credit.

In addition, target governorates of the technical assistance component are also in the Minia and Assiut Governorates. It is expected that the financial and small business capability of the SFD, financial institutions, NGOs, farmers, and farmers' associations will be improved through the Project. Therefore, farmers associations or agricultural cooperatives which are interested in the agricultural processing business will not only utilize the project as a financial resource, but will also be given a feasibility study and business management advice.

(2) Promotion of Rural Incomes through Market Enhancement Project (PRIME)

The PRIME project, supported by the IFAD, is to improve the livelihood of small scale farmers, landless labors, and rural women. The Project covers Qena, Sohag, Minia, and Beni Seuf in Upper Egypt, and Beheira and Kafr-el Sheikh in Lower Egypt.

This Project consists of "Marketing Support", "Rural Finance Component", and "Strengthening Financial Intermediaries". Activities include strengthening farmers' associations and providing a financial program. In particular, the ARDF and its affiliated banks will be the main distributors of the credit.

In this project, microcredit loans will be provided to 30,000 households with an average loan size of 8,000LE. Small size loans will be provided to about 1,000 enterprises with an average loan size of 75,000LE, and for about 170 enterprises, medium size loans will be provided with an average of 500,000LE. The purposes of these loans are to increase incomes for rural areas through promoting horticultural crops, livestock, and other value-added agricultural products. Although the specific implementation schedule is not decided, the Project period will last for eight years. The PRIME project would expect to play a role of promoting horticultural crops and agricultural processing businesses in both the Minia and Assiut Governorates.

2.7.3 Activities Planned

From this point of view, the strategy for the improvement of agricultural finance accessibility is expected to promote current available funds and enhance the farmers' knowledge about financial resources. For a longer strategy, it is necessary to strengthen the financial role of Agricultural Cooperatives in order to provide loans based on farmers' demands.

Table 2.7.2 Strategy for Improving Financial Accessibility

Short Term Strategy	Mid and Long Term Strategy
Encouraging active funds and enhancing farmers' knowledge about financial access	Strengthening the financial role of Agricultural Cooperatives

(3) Proposed Activities

The main activities for the short term are to emphasize promotion of current available funds rather than establishing new funds or setting up new credit lines. It is also important to enhance the ability for writing loan application proposals and project plans. For mid and long term strategies, activities are emphasized for strengthening the cooperatives' capability for managing financial services and setting up demand-oriented loan services.

	Short Term Strategy Encouraging active funds and enhancing farmers' knowledge about financial access	**Mid and Long Term Strategy** Strengthening financial role of Agricultural Cooperatives
Proposed Activities	➢ Collecting and Providing information about agricultural loans ➢ Holding seminars about available funds ➢ Holding workshops for applying loans and planning projects ➢ Linkage with other Donor activities	➢ Establishing cooperatives' lending services ➢ Providing various financial services such as insurance and savings

The following are the main activities for the short term:

(1) Collecting and Providing information about Agricultural Loans

Although there are a limited number of credit services for agricultural activities, there are still funds recognized as potential agricultural financial resources such as the ARDF, the SFD and the AfDB's project. Some of the agricultural cooperative staff in Minia know about the ARDF. Also, some of them have an idea to get loans from the SFD for their activities. By contrast, most of the staff in the agricultural cooperative in Assiut does not know about the ARDF. According to the ARDF staff, marketing of the fund depends on the counter part bank, so if a manager of the bank is not eager about the agricultural fund, the fund is not promoted effectively. This indicates that there is an information gap about agricultural loans. Therefore, collecting information about agriculture is an important first step to improve financial accessibility.

Another important thing is to provide collected information adequately and update the information regularly. This will possibly be collaborated with the project for the market information system. For example, financial resource information will be posted on a bulletin board installed in agricultural cooperatives.

(2) Holding Seminars about Available Funds

The purpose of the seminars is to provide an opportunity for farmers and cooperative staff to know about available financial resources. Administrative funding staff personnel will be invited to seminars to explain their activities to famers. In other words, lenders get the chance to meet potential borrowers, while farmers can get the information about loans such as conditions, the application process, and required documents through seminars.

Regarding holding seminars, governorate and district agricultural offices will play a role of promoting financial resources in rural areas. For example, it is necessary to cooperate with these agricultural offices and financial providers such as the SFD, ARDF, NGOs, and other commercial banks. As such, agricultural cooperatives will be possibly vitalized through these activities.

(3) Preparatory Workshops about Applying for Loans

The purpose of the workshops is to support loan proposals and share the information about successful cooperative activities. Participants of workshops will be cooperative staff and farmers who want to apply for loans. Governorate cooperative staff and staff from the funds will be the main hosts of the workshops.

Following is the main activity for Mid and Long Term:

(4) Establishing lending services and Providing various financial services

Establishing lending services by Agricultural cooperatives will contribute to improve loan accessibility. This is because one of the main strengths of cooperatives is the possibility of establishing lending services based on farmers' demands. Agricultural Cooperatives will be able to provide different credit services from the banks. For example, cooperatives know about crops and production of their members well. Also, it is easy to get the information about members' credit history, farmers' needs, and demands. Therefore, cooperatives will be able to set adequate agricultural loans based on farmers' demands.

Indeed, the agricultural cooperative in Manhary village, Abo Korkus, Minia District, started a lending service since 2004. The cooperative borrowed 1.5 million LE from the National Bank and then it provided loans to its members. The interest rate of their loans is 10.5% and they also charge borrowers a paper fee which is 5 LE per application document. The loans are mostly used for livestock such as buffalos and cows since the village is famous for livestock activities. This case indicates that cooperatives in specialty crop areas particularly have advantages of starting lending services in order to strengthen their specialty crops.

The key thing is sustainability of the lending service operations. The strengthening capability of the operational staff and the establishing of effective and efficient operational systems are inevitable. Setting an interest rate based on repayment performance will be helpful to keep a high repayment rate. For example, fist-time borrowers will be charged a higher interest rate with a limited amount. If they repay the money on time, the new loan has a lower interest rate and the amount is bigger. Furthermore, cooperation with extension workers is also useful to monitor their repayment process and check the condition of the field. For further development, a wide range of financial services will also be needed to manage agricultural cooperatives.

Table 2.7.3 List of Financial Source in the Project Governorates

Name	PBDAC (Principle Bank for Development and Agriultural Credit)		SFD (Social Fund for Development)	NBE (Naitonal Bank of Egypt)	ARDF (The Fund of Supporting the Agricultural Researches and Development)	Rural Development Project	CDA (Community Development Associations)
Area	Minia/ Assiut		Minia/ Assiut	Minia	Minia/ Assiut	Assiut	Minia/ Assiut
Category	Bank		Fund	Bank	Fund (by European Union)	Project by IFAD	Community Associations
Branches	119 branches, 1,103 vilalge banks (whole the country) Minia: 9 branches, 103 village banks Assiut: 7 branches, 63 village banks		every governorate has a branch	429 banking units (whole the country)	—	—	—
Main Target	Farmers		Small-Mideum Enterprises Farmers' Cooperatives Farmers	Farmers Farmers' Cooperatives	Farmers Farmers' Cooperatives	rural poor farmers	women, others
Types of Loans	Agriculturla Loan	Investment Loan	—	Agricultural Loan	—	—	—
Purpose of Loans	Agricultral Crops (e.g. maize and wheat)	Livestock, Cold Storage, Irrigation Facilities, Agricultural Machines	Agricultural Activities Social Activities Enterprises	Agricultural Activities (e.g. factories and storage)	Activities for increasing farmers' income	promoting joint or individual investment in small and microenterprises	Social Activities, Poultry, livestock
Loan Amount	2,000LE〜2,500LE(1 feddan) for maize and wheat 4,000LE for Tomato	10,000LE / feddan	Macro Project: 1m LE (maxium) Small Project: 2m LE (maxium)	—	Individual:LE 0.5m(maximum) Cooperatives: LE 5m (maximum)	—	—
Interest Rates	5% (6 months)	11%-13%	10%-16%	15%-16%	12m: 7.5% 1y-3y: 8.5% 3y-5y: 9.5%	—	—
Conditions	Land Holding (more than 6 karat)	・Land Holding ・Incoem verification ・Gurantees	project proposal and application document will be assessed.	two garantees from govermental officials	agreement by the Unit of Loan Adminisatration	—	—
Loan Duration	6 months	1〜5 years	2 years〜	1year〜	1〜5 years	—	—
Others	Adminisatration fee 0.5% other transaction cost: 30LE	Administration fee 2% other transaction cost: 30LE	—	—	—	Project period: 2007〜2015	—

Table 2.7.4 Outline of the Financial Institutions

Financial Institution	Outline
BDAC	The PBDAC plays a major role in agricultural finance. They have a number of branches at the village level which are called BDACs. One of the characteristics of the PBDAC is that most of their loans deal with individual farmers. This means that the agricultural loans of the PBDAC seems to be utilized at the production level and also there is prevalance of new techniques at the village level activities like introducting the intercropping technique and adopting new varieties of seeds.
SFD	The SFD provides a range of services, not only loans, but also grant and support for small enterprises. Besides, they have many project experiences about agricultural projects in the whole country. The SFD will be one of the possible financial resources for agricultural cooperatives to implement marketing and processing activities.
ARDF	The ARDF provides loans for a variety of agricultural activities with a low interest rate. However, there is little agricultural cooperative access to the ARDF. Promoting the ARDF will be useful for cooperative activities such as processing, marketing, and training for extension egnineers and farmers.
Rural Development Project	The Rurual Development Project is implemented by the IFAD. The project tries to organize farmers' associaitons and to promote associaitons' activities including lending services. Although they are not so active at this moment, it is necessary to examine the possibility of collaboration.
CDA	Although activities of the CDAs vary from village to village, main targets are rural women and other marginzlized people in the village. Most activities have nothing to do with agricultural activities directly; however, women's activities such as selling processed products and vegetables will be able to get support from the CDAs.
Rural Income and Economic Enhancement Project	This project will be implemented by the SFD and the AfDB. The main activities include providing lending services to small scale farmers. The practical activites has not started yet so the detailed lending scheme is not clear. The activities of this project have to be followed carefully since there is great relevance to farmers' marketing activities.
Rural Income and Economic Enhancement Project (RIEEP)	The Loan program has alreeady started to accept applications. The main target is Agri-business such as the processing business; thus, this is envisaged as one of the most promising available funds for farmers' associations and agricultural cooperatives. In addition, even small scale farmes will utilize this fund for getting bio-fertilizer and improved vairety to enhance the quality of their produce.
Promotion of Rural Incomes through Market Enhancement Project (PRIME)	The implementaiton agencies will be the ARDF and its affiliated banks. In other word, small scale farmes in rural area will not easy to get access to commercial banks. Governorate and District agricutlrual offices should be invloved in distribution of the credit.

Table 2.7.5 Assumed financial resources for each Program

	Inputs and Production	Processing	Marketing	Strengthening Cooperatives	Marketing Infrastructure
PBDAC	◎				
SFD	○	◎	◎	○	○
NBE			○		
ARDF		◎	◎	◎	
CDA		○	○		
RIEEP	○	◎	◎	◎	
PRIME		◎	◎	◎	
*Others					◎

◎: assumed main financial sources/ ○: considered options

*Others include the government and international donors

2.8 Improvement of Infrastructure

The improvement of marketing infrastructure proposed here would require the commitment of other institutions rather than MALR, such as the Governorate Office. This Master Plan, however, refers to these projects as related projects to contribute to improving agricultural marketing for small scale farmers.

2.8.1 Renovation and Rehabilitation of the Wholesale Markets

The concept is to establish fair trade places for traders and farmers to obtain better information and trade. In the Minia Governorate, there is no actual central wholesale market. In the Assiut Governorate, a wholesale market is situated on the fringes of Assiut city in an area called "Arab El Madabegh." The market does not record prices of products; it just operates as a location for wholesale traders. There is no central managerial oversight of the traders or the trading activity taking place.

To make the wholesale market functional will improve the efficiency of the distribution system of the agricultural produce and also the market contributed to pricing the produce to be the signal to the producers and traders for their transaction. However, the responsibility for establishment and operation of the wholesale market is not for MALR but for the Governorate. The MALR hence would suggest the Governorate for the requirement of the wholesale market in the mid & long term.

2.8.2 Construction of Wheat Silos

Post-harvest loss of wheat is significant in the Project Governorates. The state-owned milling factory in Assiut stores 7,200 tons in silo storage, whereas the milling factory in Minia does not have silo storage. Instead of specialized cooperatives, BDACs keep the wheat production for 3-4 months in flatland while farmers ship their production to the milling factories. Wheat production is severely devalued by temperature and drying because BDACs do not have adequate warehouse facilities. This problem has been discussed even on press reporting.

It is necessary to construct more silos to reduce the post-harvest loss of wheat, a major staple food in Egypt. The loss after the produce was taken to the storage is not considered as an issue for the small scale farmers since they are producers and sellers. However, this is a crucial issue for the nation as national food security. Since the rising retail price of wheat by increasing its import is also an issue for the small scale farmer as a consumer, this Project should be included here as a related project to this M/P. The responsible agency is the Ministry of Investment.

2.8.3 Road Network Improvement

Improving the village road network is also proposed since the roads are essential to the marketing infrastructure. Main roads in the Project Governorates are paved which is making it easier for even big-size cars to pass. However, the roads inside villages are not in good condition and constrain the traffic, i.e. it is common to see narrow unpaved roads with deep wheel ruts. Based on the location from the east and west desert highways along the Project Governorates and the access roads to them, the road network improvement should be studied and planned. Responsible agencies for village roads and main roads are the local government and the Ministry of Transportation respectively.

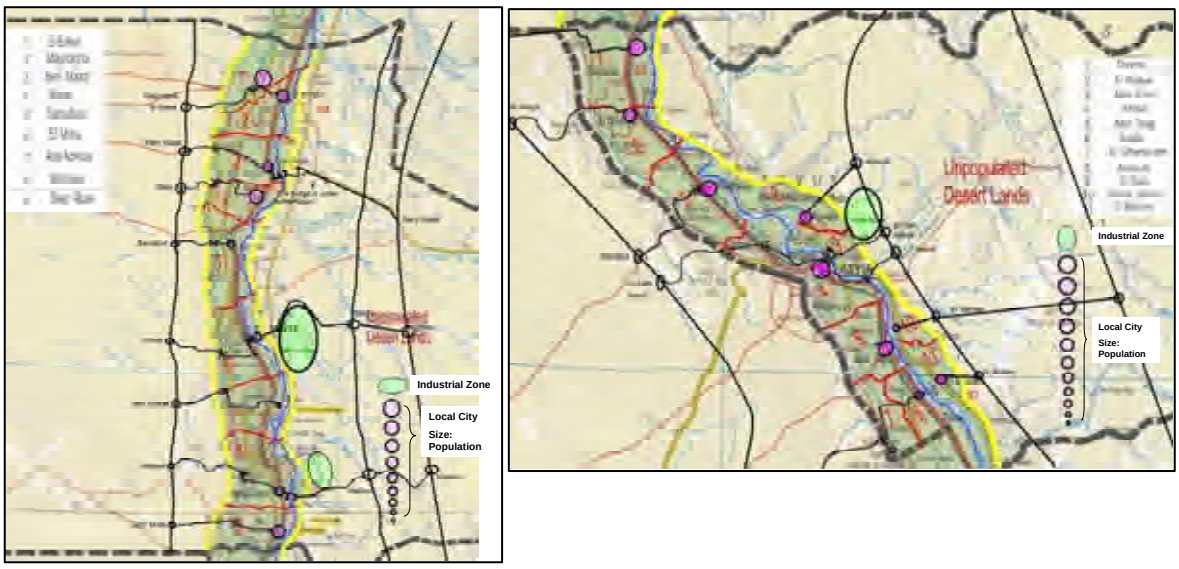


Figure 2.8.1 The East and West Highways and the Access Roads to them in Minia and Assiut

Table 2.8.1 Summary of the Projects for Marketing Infrastructure

Project	Short term	Mid & Long term	Target products	Target Area
5-1 Renovation and Rehabilitation of the Wholesale markets (Under Governorate)	• Revision and enforcement of wholesale market • Establishment of traders registration system	• Rehabilitation of wholesale markets • Disclosure of Information on transaction volume and prices • Disclosure of information on registered traders and stakeholders • Computerization	Vegetables and fruits in mid term All crops, fish and meat in mid & long term	For mid term: Rehabilitation of wholesale market in Minia city and Assiut city Establish local wholesale markets in main cities
5-2 Construction of Wheat Silos (Ministry of Investment)	Studying shortage of silos considering wheat production and import Formulating silo construction plan	Fund appropriation (public investment, PPP) and construction, O&M	Wheat	Mid term: construction in priority area Long term: coordination with other governorates
5-3 Road Network Improvement (Local Government, Ministry of Transportation)	Situation survey and analysis, inventory for improvement	F/S Implementation in the priority area	-	Mid term: construction in priority area Long term: coordination with other governorates

CHAPTER 3 TARGETS, COST AND BENEFITS OF THE DEVELOPMENT PROJECTS

3.1 Targets of the Development Projects

The targets by each Project have been set by period. These targets are defined as the number of farmers to be trained, the number of farmers' organization to establish agro-processing, the number of agricultural cooperatives for capacity development, and so on. The level of the targets has been set, taking into consideration the capacity of the Governorate Agriculture Directorates, and the degree of difficulty according to the experience of the Pilot Project implementation.

The Project concerning the capacity development of the agricultural cooperative (expanding market channel) targets one cooperative per District, or 20 cooperatives of the two governorates in the short term period and 5 cooperatives per District in the mid-long period. The target of the Project for establishing an agro-processing business has been set considering the difficulty that the farmers' organization has to prepare the fund for investment. The Projects at the stage of input/production (mainly demonstration farm activity) targets to establish 2 feddan of demo-farm per season (summer and winter: twice per year) per District. The following table summarizes the Project targets:

Table 3.1.1 Targets of the Development Projects

Development Tactics	Development Project	Short-term Target (1-5year)	Mid & Long-term Target(6-18year)
Market information to utilize for farming	Market information collection and dissemination	Putting up billboard at the 592 village cooperatives in the 2 governorates to send information	Establishing information center at the 2 governorate agriculture directorates and the 20 district agriculture offices
Expanding market channels	Expanding market channels, collection place, selling points	Reactivating 20 village cooperatives, facilitating 20 collection places, community markets and government direct shops	Reactivating 100 village cooperatives, facilitating 100 collection places and community markets, developing 6 multi-business agricultural cooperatives
Adding value to produce	Making brand of agriculture produce	Training 400 farmers in demo-farm of 200feddan	Training 4,000 farmers in demo-farm of 2,000feddan
	Agro-processing	Supporting 24 organizations for business establishment Creating job opportunity of 140 - 240 people	Supporting 72 organizations for business establishment + quality improvement Creating job opportunity of 420 – 720 people
Reducing post-harvest loss	Post-harvest facility	Constructing 1 facility (100 farmers per year to use it)	Constructing 6 facilities (600 farmers per year to use)
Improving quality of produce	Improving input distribution	Supplying vegetable seedlings to 4,000feddan (Assiut)	Supplying vegetable seedlings for 13,000feddan (Assiut)
Improving quality, harvesting in off-season, Promoting profitable crops	Improving input distribution, improving quality, off-season harvesting, promoting horticulture	Establishing 100 sites of demo-farms Training 2,000 farmers	Establishing 260 sites of demo-farms Training 5,200 farmers
Supporting activities by administration	Capacity development of farmers' organization, strengthening extension, improving access to finance	Training 136 extension workers, financial seminar at 290 village cooperatives	Training 598 village extension workers, financial seminar at the remaining cooperatives and 100 cooperatives to engage in financial services

3.2 Approximate Cost Estimate

The following Table 3.2.1 shows the major activities, targets and approximate project costs for each project. The contents of the projects have been categorized into the short term (the first 5 years from 2012 to 2017 assuming the starting year is 2013) and the mid & long term (13 years from 2018 to 2030, which is the target year of SADS 2030).

Table 3.2.1 Activities, Targets, and Approximate Cost Estimate of the Projects

Tactics		Project No.	Title	Short Term（1st to 5th Year：2013～2017） Major Activity	Target	App. Cost (LE)	Mid & Long Term（6th to 18th Year：2018～2030） Major Activity	Target	App. Cost (LE)	Total APP. Cost (LE)
1. Sales	Acquiring market information to utilize for farming and sales	1-1	Establishing Market Information System	Establish market information collection and dissemination system (combine with Mobile Extension Service of CAAE)	put up billboards and information dissemination in 342 cooperatives in Minia and 250 cooperatives in Assiut	288,400	Establish information center in the Governorate and each District Agriculture Office	Information center at 22 sites (GAD and 9 DAO in Minia, GAD and 11 DAO in Assiut)	1,342,000	1,630,400
	Expanding market channels	1-2	Supporting Small Scale Farmers to Expand Market Channels	Support marketing by village agr. cooperative (contract farming, loan provision to farmers, price stabilization fund etc., fund razing, collective shipping)	Revitalize 1 agr. cooperative per District (9 in Minia, 11 in Assiut)	482,000	Increase the No. of cooperative to participate in marketing	Revitalize 5 village cooperatives per District (45 in Minia, 55 in Assiut)	1,840,000	2,322,000
							Promote multi business cooperative (cooperative union)	Nurture 3 village cooperatives per Governorate to be multi business cooperative (union)	45,000	45,000
		1-3	Facilitating Collection Places in Villages	Construct collection place managed by cooperative	Construct 1 place per District (9 in Minia, 11 in Assiut)	1,400,000	Increase the No. of collection place	Construct 5 sites per District (45 in Minia, 55 in Assiut)	5,600,000	7,000,000
		1-4	Facilitating Selling Points (Community Markets, Government Direct Shops, etc.)	Construct community market(village road paving, or renovating coop. land), and improve direct shop of GAD, DAO	1 market per District (9 in Minia, 11 in Assiut), Renovate Governorate / District direct shop (10 in Minia, 11 in Assiut)	1,610,000	Increase the No. of community market	Construct 5 sites per District (45 in Minia, 55 in Assiut)	5,600,000	7,210,000
	Adding value to produce	1-5	Making Brand of Agricultural Produce (Utilizing	Improve distribution of bio-materials, demo-farm, making brand of "Clean Agro-produce" through direct shops	Demo-farm of bio-materials: 10fed/District (200fed) Train 400 farmers	3,000,000	GAP certification by the Governorate, Advertisement, develop large scale contract farming, expansion to New Land	Demo-farm of bio-materials: 100fed/District (2,000fed) Train 4,000 farmers	6,000,000	9,000,000
2. Post-harvest		2-1	Promoting Primary Agricultural Processing (adding value to produce)	Establish organization, facility for processing of produce in the village (pickles, dried vegetables, frozen vegetables etc.)	6 Districts 12 villages (12sites) to establish agro-processing units: create job of 70～120 people (Initial cost should be procured by the cooperative)	427,200	Upgrade quality of products Improve safety by HACCAP Increase the No. of processing unit	Introduce quality / hygiene control rule, HACCP Establish 12 sites/5years of agro-processing (total 36 sites): create job of 210人～360 people	1,281,600	1,708,800
		2-2	Promoting Processing Products (Converting Useless Crops to Useful)	Establish organization, facility for processing low grade produce to add value	6 Districts 12 villages (12sites) to establish agro-processing units: create job of 70～120 people (Initial cost should be procured by the cooperative)	427,200	Upgrade quality of products Improve safety by HACCP Increase the No. of processing unit	Introduce quality / hygiene control rule, HACCP Establish 12 sites/5years of agro-processing (total 36 sites): create job of 210人～360 people	1,281,600	1,708,800
	Reducing post-harvest loss	2-3	Establishing Post-harvest Facilities	Improve post-harvest processing of specialty crops (herbs e.g. basil), establish farmers' organization	Construct 1 site (100 farmers per year use facility)	1,260,200	Increase the No. of post-harvest facility Establish production and management	Construct 2 sites/5years (total 6 sites)：used by 600 farmers per year	3,780,600	5,040,800
3. Input / Production	Improving quality of produce	3-1	Improving Agricultural Input Distribution System	Establish certified seeds / seedling distribution system by GAD	Supply seedlings to 4,000feddan in Assiut (2nd to 5th Year)	800,000	Expand the system of certified seeds / seedlings production and supply	Supply seedlings to 13,000feddan in Assiut	1,300,000	2,100,000
				Introduce bio-control methods against pests	Total 100 demo-farms, train 2,000 farmers	3,400,000	Expand the production and supply system of bio-control materials	Total 260 demo-farms, train 5,200 farmers	6,000,000	9,400,000
				Demo-farm of certified seeds / seedlings Guide compost manure Guide pest control Introduce bio-control methods		3,470,000	Strengthen distribution system of fertilizers / pesticides Strengthen forecasting of pest occurrence and guidance to farmers		8,905,000	12,375,000
		3-2	Improving Quality of Agricultural Produce	Introduce quality improvement technologies Construct collection place(1-3)			Establish official quality standard of agr/ produce Strengthen input distribution system			
	Harvesting in off-season	3-3	Adjusting Cropping Pattern	Introduce cropping pattern to harvest in off-season Strengthen expanding green house horticulture			Establish year-round cropping pattern of certain crops			
	Promoting profitable crops	3-4	Promoting Horticultural Crop Production	Strengthen extension of horticulture based on demand Promote crop diversification			Establish stable supply system of agr. inputs Strengthen loan system for farming			
4. Administrative Support	To promote above tactics, assist in farmers' awareness creation, capacity development, cooperation, and access to finance	4-1	Supporting Capacity Development of Farmers' Organization	Support farmers' organization to implement above projects (guidance, training)	(Support above projects)	-	Support making multi business agricultural cooperative (above 1-2)	(Support above projects)	-	-
		4-2	Strengthening Agricultural Extension Services	Capacity development of extension workers to implement above projects Renovation of test equipments	Train total 136 extension workers (46 in Minia, 90 in Assiut)	1,815,000	Service provision by trained extension workers and strengthen farmer to farmer extension	Train village extension workers (344 in Minia, 216 in Assiut)	9,840,000	11,655,000
		4-3	Improving Agricultural Finance Accessibility	Information collection and dissemination of agricultural finance (seminar, workshop)	Information sharing in all the village cooperatives Holding seminar (170 and 120 cooperatives in Minia and Assiut)	652,300	Financial service according to the diversified needs of farmers and assist in establishing loan facility by agr. Cooperative or farmer group	Hold seminar in the rest of village cooperatives, 5 cooperatives per District, total 100 cooperatives (55 in Minia 45 in Assiut) will provide loan service like micro-finance.	1,594,000	2,246,300
Approximate Project Cost Total (LE)						19,032,300			54,409,800	73,442,100
Approximate Annual Project Cost (LE/year)						3,806,460			4,185,369	4,080,117
Approximate Annual Project Cost in Minia (LE/year)						1,712,907			1,883,416	1,836,053
Approximate Annual Project Cost in Assiut (LE/year)						2,093,553			2,301,953	2,244,064

As of June 2012 1LE = ¥13
1US$ = LE6

The approximate cost for implementing the projects is estimated at LE19 million for the short term period (5 years), or 1.7 million LE/year for Minia and 2 million LE/year for Assiut. As the Assiut Governorate consists of 11 districts while Minia has 9 districts, the project cost for Assiut becomes higher than Minia. The project cost for the mid & long term period (13 years) is estimated at LE54.4 million, or 1.88 million LE/year for Minia and 2.3 million LE/year for Assiut.

The project costs include expenses for capacity development such as personnel expenses, transportation, and equipment for trainings, inputs for demo-farms, and the construction of small-scale infrastructure. The investment cost for establishing an agro-processing business is supposed to be made by the business entity, i.e. the farmers' organizations. As for the construction of a post-harvest facility (drying facility for herbs), it is proposed to allocate public investment using public land (the detail of the contents of the project costs are referred to in the action plan of each project in Chapter 6.).

3.3 The Benefits of the Development Projects

3.3.1 Economic Benefits

Economic effects of the development projects were roughly analyzed. The economic analysis was carried out with a financial price instead of an economic price. The result of the analysis is shown in Table 3.3.1 below. In implementation, the projects under the development tactics of "Expanding market channels", namely "1-2 Expanding marketing channels", 1-3 Facilitating collection places", and "1-4 Facilitating selling points" will be combined with the project "1-5 Making brand of agricultural produce", which includes the improvement of the crop production method and also the projects in the stage of input/production, namely "3-2 Quality improvement", 3-3 Harvesting in off-season", and "3-4 Promoting horticulture" in order to increase the effectiveness of these projects. Therefore, the economic analysis was also carried out based on the combination of these projects.

IRR (Internal Rate of Return) of "1-5 Making brand of agricultural produce" and the combination of the projects under the input/production stage are high because the investment cost is relatively low, and the more farmer-to-farmer extension expands, the higher the economic efficiency will be. As for the projects of agro-processing and the post-harvest processing facility, the IRR is relatively low compared to the above as the initial investment cost for these projects is relatively high. However, the economic efficiencies of these projects are high enough should the business be successful.

NPV (Net Present Value) is to indicate the magnitude of the economic effects. The NPV of the projects under the input/production stage can increase by combining the development tactics of "Expanding market channels" as the number of beneficiaries could increase. The project of "Making brand of agricultural produce" is to apply bio-fertilizers in order to reduce production cost and increase the value of sales by yield increase and value added to produce. Based on the results of the Pilot Project, a relatively high increase of farm income and high NPV are expected.

For the agro-processing project, it will contribute to providing small scale farmers with the place to sell excessive produce, which cannot be sold at the wholesale market. A post-harvest facility to dry herbs would enable farmers to sell green basil at a higher price should the agricultural cooperative consider the public benefits as the facility can make higher quality products. Also the establishment of these facilities can create job opportunities for local women and landless farmers.

3.3.2 Other Development Benefits

As above, it is expected that the economic benefits will be brought about by the implementation of the projects in this M/P, such as increase of income for farmers and creation of job opportunity along with the economic efficiency and effects. In addition to them, the following development effects are expected to come out:

- Expanding social participation of women by creating job opportunity for them: in rural Upper Egypt, the activities of women are restricted, e.g. farm labor, employment outside the village, etc. Establishing agro-processing units within the village proposed in this M/P can create the job opportunity for women. That would contribute not only to generating income for women but also providing them with the opportunity to participate in economic activity.
- Utilization of Resources and Increasing Safety of Food: The projects of making brand of agricultural produce and quality improvement proposed in this M/P include the application of bio-fertilizers, production improvement with less use of pesticides, i.e. the projects contribute to utilizing the natural resources (organic materials) in the area and improving the living standard of the people by increasing healthy and safe agricultural production.
- Contribution to food security: The main challenge of this M/P is to increase the profitability of land. In recent years, the transfer of farmland to non-farmland has been progressing in the Old Land. Increasing profitability of farmland would contribute to maintaining the farmland, i.e. foundation of agricultural production, thereby contributing to national food security.
- Revitalization of agricultural cooperatives – utilizing the assets of the village to activate rural economy: agricultural cooperatives, a representative farmers' organization in the rural area, could activate rural economy by utilizing their human resource and economic assets. Revitalization of the agricultural cooperative is one of the major components of this M/P.
- Narrowing regional economic disparity with poverty reduction: Upper Egypt is the region with the highest poverty ratio in the country, so the poverty reduction in this region to narrow the regional economic disparity is a pressing issue. The development of the agricultural sector, which is a major industry in Upper Egypt, will contribute to tackling the issue and bringing stability to the nation.

Table 3.3.1 Economic Analysis of the Projects

Project No.	Project Title	Assumption of the Economic Analysis	Economic Efficiency (Financial Internal Rate of Return: FIRR) [Net Present Value: NPV]		Increase of Farm Income	Job Creation
1-1	Establishing Market Information System	It is difficult to apply economic analysis due to unknown investment and mechanism of profit generation by the private company for public- private partnership	–		For the Pilot Project, cost for SMS was around 5LE/month for one customer. Assumed that one farmer subscribed 4 months of SMS, which costs LE20 and the farmer was able to sell 10tons of tomato at 0.1LE/kg higher than the normal price on average by using SMS information, incremental income is calculated at LE1,000. How the farmer feels the contribution of SMS to their sales would be the indication of effects.	It is expected that the private company for partnership will open shops for selling mobile SIM card. By this job creation is expected.
1-2	Supporting Small Scale Farmers to Expand Market Channels	The projects should be implemented together with the projects under the input / production below. Assumed that technology for quality improvement is displayed on 2 feddan-demo-farm per village. The extended area is assumed below but combining the project of expanding market channels, additional investment for revitalizing cooperative will be assumed to increase the extended area. In the village to implement revitalization of agr. cooperative, it is assumed that farmland of farmers who adopt the technology and join the marketing activity would reach 40 feddan in 12 years. In the end of Mid&Long term, 100 villages (2,333feddan) would be covered by the marketing activity.	(40%) [LE17,132,394]	(Base)	The farm which adopted the introduced technology by the projects of input / production stage would get incremental income of 800LE/fed. In the end of M/P, 1,360feddan (2,720 farm household assuming 0.5fed/household) will get benefit. In combination with the projects under the tactics of expanding market channels, total 3,693feddan (7,386farm households) would get benefit.	Creation of farm labor by horticulture promotion, off-season harvesting will be expected. Also for grading operation at the collection places, grading labor especially for women will be created.
			(20%) [LE3,841,177]	(Extended area:1/2 of base)		
1-3	Facilitating Collection Places in Villages		(10%) [-LE45,411]	(Extended area:1/4 of base)		
1-4	Facilitating Selling Points (Community Markets, Government Direct Shops, etc.)	Based on the result of the Pilot Project, potato is picked up as representative crop and with application of bio-fertilizers it is assumed that 5% of production cost is reduced and 25% of yield or value addition is achieved. By this assumption, net benefit will be 3,300LE/fed. In the end of Mid&Long Term, Clean Agro-produce will be cultivated on 2,200feddan.	(41%) [LE21,122,444]	(Base)	As potato as representative crop, it is expected to increase farm income of 3,300LE/fed. In the end of M/P, 2,200fed (4,400 households) would get benefit.	Creation of harvesting labor is expected by the increase of yield with the project.
			(25%) [LE 8,279,484]	(Extended area:1/2 of base)		
1-5	Making Brand of Agricultural Produce (Utilizing		(14%) [LE1,858,004]	(Extended area:1/4 of base)		
2-1	Promoting Primary Agricultural Processing (adding value to produce)	The profitability of an agro-processing unit is analyzed. Cost items are investment cost, O&M cost and trainings by administration. Benefit is the profit by sales of products. Operation ratio of the unit; 10months ×20days, representative products: tomato paste and frozen vegetables In the end of Mid & Long term, 72 units will be established.	(20%) [LE59,754/site]	(Operation 10 months)	(annual benefit per agro-processing unit) Create market for farmers to supply raw materials: tomato 10t（5months ×20days×100kg）：LE11,000 vegetables 10t(-do-)：LE31,500 Total LE42,500/year/unit. 3,060,000LE/year for 72 units The profit of cooperative will be allocated to cooperative, to members, and officers to engage in the business according to Agr. Coop. Law	Job creation for workers at the unit: 6 -10 people (women) per unit, in Mid & Long term, job of 20 - 720 people can be created. Wage for women would around 200LE/month.
			(14%) [LE24,691/site]	(Operation 8 months)		
2-2	Promoting Processing Products (Converting Useless Crops to Useful)		(8%) [-LE10,372/site]	(Operation 6 months)		
2-3	Establishing Post-harvest Facilities	Assumption: basil drying yard (1 site) construction with the area of 1 fed, 6 months operation, 300t of green basil is processed. Without Project: process yield: 8% by secondary process, unit price 3LE/kg With Project: process yield: 11%, unit price 5LE/kg With Project additional investment: drying yard, kafas for improved drying method, additional labor (3 times of Without Project), trainings In the end of Mid & Long term, 6 sits will be constructed.	(16%) [LE198,470/site]	(Base)	As for the Pilot Project, the cooperative bought green basil at 0.3LE/kg from farmers. It was higher than average price of 0.25LEkg and hence increase of farm income is 20%. The profit ratio of the basil yard is 8.6% based on the Pilot Project and if half of this profit were returned to the farmers, farm-gate price would be 0.32LE/kg. The cooperative should set certain level of profit and the surplus should be returned to the farmers by razing the farm-gate price, so that the benefit can be shared by the villagers. Assuming 300t processing per year and razing farm-gate price, Farm income increase of LE21,000/year/site would be realized. For total 6 sites in Mid & Long term, income increase would be LE126,000/year.	As per draying yard, drying operation labor will be created. 110 man-day/year of additional job is expected (Improved drying method would need 3 times of labor compared to traditional method). In Mid & Long term, 660 man-day/year of drying labor from 6 sites will be created. Also for operation of equipment by the cooperative, 3 to 8 people of the operation labor per site will be created.
			(11%) [LE42,925/site]	(Selling price -10%)		
			(7%) [-LE112,619]	(Selling price -20%)		
3-1	Improving Agricultural Input Distribution System	demo-farm is established every year 80feddan (33.6ha). On average, it is assumed that the introduced technology would be adopted on the same area of demo-farm. Therefore, every year the technology is extended on 80 feddan. It is assumed at the end of the Mid & Long term (18th year) that the technology is adopted on total 1,360 feddan and 80 feddan as demo-farm. As for benefit, increase of farm income on the demo-farm and technology adopted farm is estimated. Crop is not specified but general rate of the cost and benefit will be applied in estimation. It is assumed that the net benefit will be 2,000LE/fed on demo-farm and 800LE/fed on technology adopted farm.	(40%) [LE17,132,394]	(Base)	It is expected that the technology adopted farm from the demo-farm would get incremental income of 800LE/fed/crop. In the end of M/P, 1,360feddan (2,720 households) would get benefit. It is estimated that in combination with the above projects under the tactics of expanding market channels the benefit would extend to 3,693feddan (7,386 households) in the end of M/P.	Creation of farm labor by horticulture promotion and off-season harvesting will be expected.
3-2	Improving Quality of Agricultural Produce		(20%) [LE3,841,177]	(Extended area:1/2 of base)		
3-3	Adjusting Cropping Pattern		(10%) [-LE45,411]	(Extended area:1/4 of base)		
3-4	Promoting Horticultural Crop Production					

CHAPTER 4 POINTS TO BE CONSIDERED FOR IMPLEMENTING PROJECTS

This chapter discusses the points to be considered when implementing the Development Projects proposed in this M/P based on the lessons learned from the Pilot Projects, which were implemented from March 2011 to April 2012. First, the outline of the Pilot Projects is summarized and then the points to be considered are shown (Refer to APPENDIX 3 for the detailed results of the Pilot Projects).

4.1 Implementation of Pilot Projects

4.1.1 Objectives of the Pilot Projects

The Pilot Project was implemented with the objectives below:

1) To examine the relevance of the draft Master Plan by verifying the relevance of the implementation organization and the farmers' organizations and the characteristics of the village society through implementing small-scale projects
2) To obtain lessons towards the implementation of the future projects

4.1.2 Category of the Pilot Projects

The Pilot Project components are selected in the following four categories:

1) Supporting the marketing of agricultural produce

There have been a lot of small traders at the village level. These traders have an important role to deliver the produce from the farm to the market. There is lack of information for small scale farmers to seek for other channels of marketing and prices to make them feel fair. Collecting market information such as wholesale price and the list of traders and disseminating them to small scale farmers to contribute to their negotiation with traders were carried out. Also, an activity of collecting and shipping agricultural produce by agricultural cooperatives to expand the marketing channel of small scale farmers was attempted to be carried out.

2) Reducing loss and adding value through post-harvest processing

3) Selling produce at a high price by quality improvement and off-season cultivation

There are regions in which some specialty crops have been cultivated. In such regions, small scale farmers have also been engaged in cultivating the specialty crops and the marketing channels have been established. However, there is still room for improving their income through quality improvement, reducing loss at post-harvest processing, processing low grade produce, empowering negotiation of farmers with traders, etc. The Pilot was carried out, aiming at increasing the income of farmers through such improvements as well as aiming to clarify the role of the Government for such value-addition activities.

4) Promoting horticulture crop and marketing for the small-scale farmers

A considerable number of the small scale farmers in the Project area is not engaged in production and sales of profitable crops such as vegetables as a mean of increasing their income. It is desirable that this Master Plan should include activities to bring benefit to such subsistent micro scale farmers, who would share half of the small scale farmers. This Pilot was carried out aiming at promoting an option for small scale farmers, which is to transfer from subsistent farming to commercial farming, even on a tiny farmland, by cultivating profitable horticulture crops.

4.1.3 Pilot Projects and the Sites

The following table shows the Pilot Project components:

Table 4.1.1 Pilot Project Components and Location

	Project Component	No. of Village	
		Minia	Assiut
1	**Supporting Marketing of Agricultural Produce**		
1-1	Market Information Collection and Dissemination Service		
1-2	Marketing (Collection and Shipping) of Produce by Cooperative		
2	**Promoting Post-harvest Improvement and Processing**		
2-1	Processing and Marketing of Excessive and Low Grade Produce (Pomegranate, Winter Tomato and Vegetables: Processing)	1	2
2-2	Reducing Post-harvest loss and Quality Improvement (Basil: Establishing Improved Drying Facility)	—	1
3	**Improving Profitability of Specialty Crops through Production Improvement**		
3-1	Increasing Profitability through Quality Improvement (Garlic, Onion: Introducing improved variety and advanced cultivation method)	2	—
3-2	Increasing Profitability through Selling Produce in Off- season (Potato: Introducing intercropping with maize) (Summer Tomato; Introducing intercropping with maize)	—	1
3-3	Cost Reduction and Quality Improvement by using Organic Fertilizers	6	5
4	**Promoting Horticulture Crop and Marketing to Small-scale Farmers (Introducing intercropping of vegetables with maize)**	3	3
	Total No. of Village	12	12

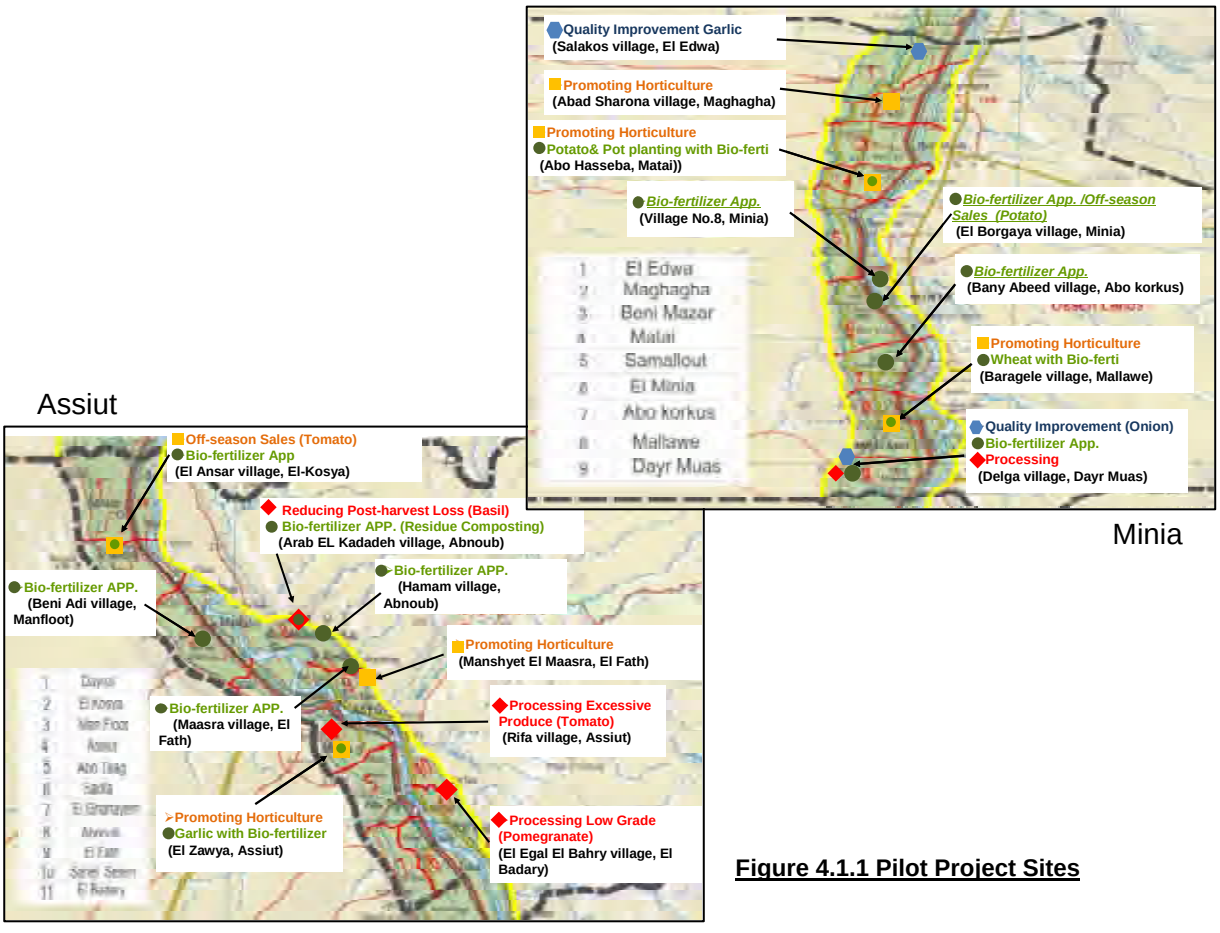


Figure 4.1.1 Pilot Project Sites

4.2 Points to Be Considered for Implementing Projects (Outline)

The points to be considered based on the lessons from the Pilot Projects are focused on marketing support and agri-business promotion in the village like agro-processing, since these supporting activities have been unfamiliar for the government administration as they are at the fringe of private initiative as well as the fact that this M/P is formulated from the viewpoint of the rural development through improving marketing of agricultural produce. Then the following issues are discussed: extension services, which have ever been an important service of MALR, supporting the farmers' organization, i.e. agricultural cooperatives, which have been functioning as a window of agricultural administration in the village, and implementation set-up to integrate these issues. Furthermore, social consideration in implementing projects is discussed.

Table 4.2.1 Summary of the Lessons and Recommendations from the Pilot

Item	Points to Be Considered
Supporting Marketing by Administration	Relevance of information should be considered, should pay attention to price trend and assist farmers in planning cropping pattern.
	Establish direct shops at Governorate/District, cooperative to promote sales/Sale promotion by holding an agriculture fair.
	Consider public investment for infrastructure improvement for specialty crop area.
Promotion of Agri-business such as agro-processing	Support making financial plan including the operation cost of the first few months as well as the investment cost
	Support from material procurement, planning for marketing and technical trainings, monitoring and supervision based on the written record.
	Supervise licensing, contracting with workers to upgrade the business.
	Require building network of human resources in the area.
Extension (Cultivation improvement, Horticulture promotion)	Importance of practical training.
	Coordination among Governorate, District and Village offices, and research center is effective.
	New technology should be transferred firstly to the experienced farmers and diffused to the subsistence farmers around (Two-step Agricultural Extension).
	Scale of demonstration farm (6-10fed led by Governorate, 20-40fed led by District).
Farmers' organization	Village cooperative can be a body to establish agribusiness (agro-processing) as they can use their assets namely land and buildings, and they also have human resources.
	Support the village cooperative through the cooperative structure (Governorate and District federations) to get internal fund raising or access to external loans.
Implementation set-up	To promote establishing a committee joined by the stakeholders in the region to implement projects By this way, the possibility of involving active person can become higher. Also this can make network of human resources in the region and the committee can be a recipient of the support.
	Strengthen the function of MALR (coordination for committee, support agribusiness establishment in the village, promote public-private partnership for production improvement,, managing direct shops and matching between farmers and traders.
	Required to make linkage between the Central Administration and Local Administration
Social consideration	Especially rural women seldom have external communication and therefore, peer-to-peer learning processes, such as study tours and field visits, could be very effective.
	The wage of women can vary widely depending on the local women labor supply due to the difference of openness of the local society. This should be considered to establish business.
	In the village, people opt to follow the bond of big family (eela). This should be considered for extension activity. When the board members of cooperatives represent the big families of the village, this could help maintain social balance when we go through the cooperatives.
	The characteristics of the village differ by the distance from cities, historical background, tribal diversity, etc. The social structure of the village should be understood prior to implementation.

4.3 Marketing Support by Administration

4.3.1 Collection and Utilization of Market Price Information

As an administrative service, market price information collection and dissemination was implemented in the Pilot Project. The wholesale price data obtained from Minia and Assiut wholesale markets are from randomly selected sample wholesalers and therefore the relevance of the data should be taken into account. To support the use of the data with such a shortfall, it would be useful to see the trend of the price. Continuous collection and distribution of data would enable the receivers to capture the price trend.

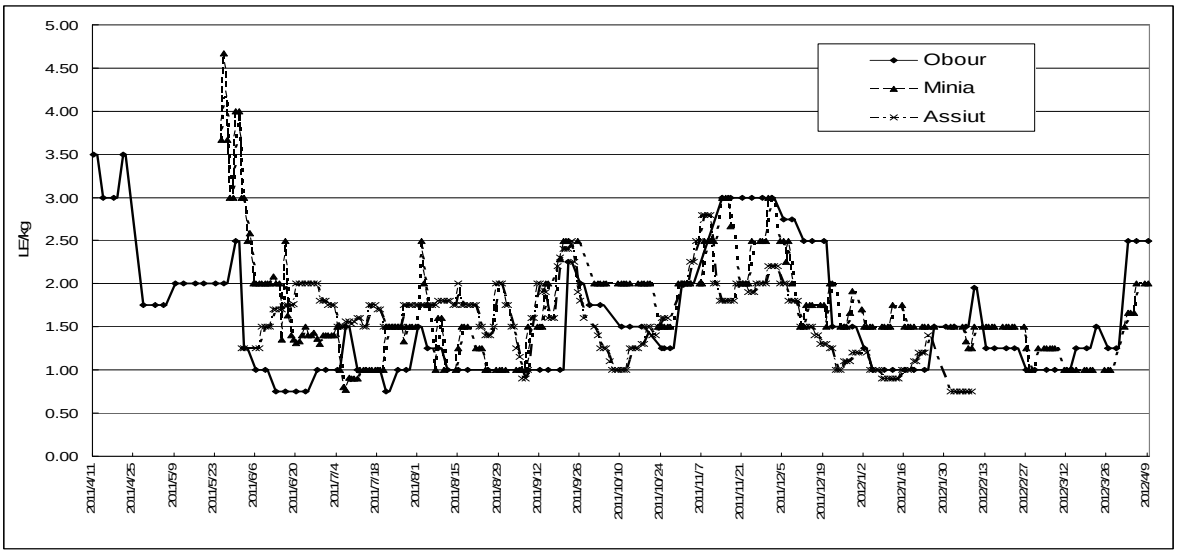


Figure 4.3.1 Wholesale Price Data Collected by C/P (Tomato)

The above data, the wholesale tomato price, has been collected since the Pilot Project started. This data would be helpful for farmers to decide the timing of cultivation. However, farmers need to utilize price data carefully because price trend is different from year to year. Also, it is influenced by the international price trend. It often happens that farmers cultivate their crops at the same time with other farmers since farmers within the same area refer to the same price trend. From this point of view, price data should be utilized with careful consideration.

One of the Pilot Projects was to introduce the intercropping method to make the tomato harvest period longer and to enable selling at a higher price. Some of the successful farmers harvested tomato from September 2011 to January or February 2012. These farmers did not cultivate wheat in winter, but cultivated cucumber after tomato harvesting. This cropping pattern is totally different from the traditional one. Farmers need to think about what the best cropping pattern is to maximize their profits. Agricultural Extension workers will be expected not only to give price information, but also advise a suitable cropping pattern with the viewpoint of year around cultivation.

4.3.2 Supporting the Market Channel Development for Value-added Products

Official Agencies should support implementing organizations in agri-business. For example, village cooperatives advertise their products to local residents in villages, and promote marketing to local retailers under the support of District offices. At the District offices, a direct shop will be established, and local agriculture fares will be held with Governorate Agriculture Directorates. At the Governorate level, Governors will promote agriculture fares and other events. Giving prizes and competitions will help these events become successful.

Governorate and District Agriculture offices already have a function of selling local agricultural produce. As such, these existing marketing channels should be utilized to promote marketing of agricultural produce and processed products. In addition, direct shops at Governorate Agriculture Directorates should also be utilized for creating differentiation and brand as high quality healthy organic products. Village cooperative members can learn customer satisfaction and their needs through dealing with customers directly at these shops. It also suggests that this kind of direct shop be established inside the village cooperatives, so members can learn consumer opinions and demand at their own direct shop.

4.3.3 Upgrading the Specialty Crop Area and Public Investment

When we look at the current practice of basil drying, it is rational from a labor saving point of view, but tends to result in low quality – low price marketing. The Pilot aims at introducing the improved drying method to upgrade the quality of dried basil. The issue is whether the local traders would reward this quality. The result of the trial above indicated that if the amount of production is little albeit the quality is high, the quality would not be fully evaluated by the trader. In order to promote the high quality – high price transaction of the product, it is necessary not just to produce a quality product but also to produce a certain level of amount stably.

During the pilot project, the seminar was held to explain the advantages of producing high quality basil as the region for local basil producers and traders. It also needs to promote investment in facilities for producing high quality dried basil. A basil drying yard was constructed on the public land for the pilot project. A large public facility like a drying basil yard should rely not only on private investment, but also on public investment. This kind of facility could be regarded as a public project, and public investment should promote to formulate specialty crop areas.

4.4 Assisting Agri-business Promotion such as Agro-processing

Assisting the establishment of agro-processing business by the agricultural cooperative implemented as the Pilot Project will lead to creating job opportunity as well as utilizing local agricultural produce. It is expected that the agricultural administration would be equipped to respond to the needs of agri-business promotion in the village. The following are the points to be considered for agri-business promotion learned from the implementation of the Pilot.

4.4.1 Establishment and Management of Agro-processing Business

(1) Initial Cost for Business Establishment

There is also financial consideration for constructing processing facilities to produce added-value products. Operating these facilities needs not only initial investment cost, but also a running cost until generating profits (running cost needs at least three months per crop season). As such, the financial plan should be considered carefully. The MALR considers the way of financial support based on the financial plan.

(2) Operation and Supervision of the Business

The Study Team has conducted the training for business planning to responsible persons of agricultural cooperatives. Analyzing the current situations of sales, they are requested to agree among members for actions of processing and sales. The head of agricultural cooperatives and female leaders of processing groups should understand the expected selling prices or attracting prices for consumers with calculation of the costs on raw material procurement, packages, wages, power and fuel, consumable

goods and depreciation. There are cases to improve taste and diversify products by ideas and suggestions of group members. These procedures will contribute to sustainability of operation.

Regarding management of the facilities, cooperatives did not much care about effective management structure due to lack of management experience. It is necessary to install equipment along with processing flow, and try to use less energy such as gas, water, and electricity. The concepts of "Making order", "Tidying up", and "Cleaning" are introduced during the pilot project. Processing businesses should be promoted and monitored with these perspectives.

Moreover, recording of the operation is important for proper management; however, the cooperatives' operation members did not record their activities properly, and they did not calculate recorded numbers to look back at their own performance. An activity record is necessary for conducting "Check-Action". Recording activities should be promoted organizationally. Administrating authorities (District and Governorate Agricultural Offices) monitor activities of implementing organizations (cooperatives), and evaluate records of activities and suggest operational and technical aspects. In the future, the cost of these activities should be budgeted. Implementing a PDCA (Plan-Do-Check-Action) cycle is important to operate processing units effectively and efficiently. Market research and a questionnaire-based survey will be helpful to respond to market demand and improve the quality of the PDCA cycle.

(3) Upgrading of Business

Products, except Basil, have been sold to officers and workers through the Women's Development Center in the Department of Agriculture in Minia and the store in the Department of Agriculture in Assiut. After test sales with evaluation, the recipes of ingredients have been standardized. Now the groups are trying to sell products in the villages through cooperative networks. In order to expand selling amounts, more discussion among processing group members should be conducted to make the commodity's story, i.e. what a differential advantage is, besides price competitiveness. One of the advantages might be emphasis on food safety. Furthermore, improvement on packaging material, design and labeling is essential to sell products outside of the district.

Official registration is required for the manufacturing of food products when the processing unit develops their business:

- Trade Registration for small-scale industries (Industrial Development Authority)
- Tax Card (Tax Office)
- Sanitation License (District Health Office)
- Environmental Documentation (District License Office)
- Fire Safety License (District License Office)

Also, official permission such as labor insurance is necessary for hiring permanent staff instead of part-time staff. Governorate and District offices are expected to support these procedures.

4.4.2 Use of Human Resources and Networking

Some of the counterpart members have experience in the processing businesses. In particular, there is the Rural Women's Development Center provided by the IFAD Project in the Minia Governorate. Several trainers of agro-processing, economical study and management belong to this Center. They cooperated with the pilot project in terms of selection of suitable equipment and providing training to cooperative members. On the other hand, there is not such a facility in Assiut Governorate. A processing expert from Assiut University cooperated with the pilot project. Strengthening the

regional human resource network is one of the important aspects to promote the processing businesses.

4.4.3 Expansion of the Project

Governorate Agriculture Offices should consider how to expand agro-processing businesses to other villages. A detailed plan is necessary to expand human resources, capital, techniques, and information. These aspects need to be prioritized. The priority area, implementation timing and method should also be considered. The following summarize the main points of expansion:

- Not only Village Cooperatives, but also farmers' organizations or groups, and even individuals could be a target of incubation support.
- As for the Pilot Project, villages producing specialty crops were selected, and then other available crops in the villages were added to processed items to increase the operation ratio. From this experience, specialty crops or crops which are easily available should be selected to be processed.
- Location of processing facilities prefers to establish convenient and outstanding places such as near owners of facilities. Also, it is better to use their own land so that they do not need to pay rent.
- Regarding operation and management of facilities, lectures, trainings, and human resource development should be given by experts.
- In terms of regional expansion, a wide range of stakeholders should be involved in coordination system to promote rural development. The Governorate promotion committee consists of Governorate offices, Districts offices, and technical institutions e.g. an Agriculture Research Institution and Universities to facilitate coordination of the whole Governorate areas. The District promotion committee consists of District offices, Village cooperatives, and individual advisers. The Village promotion committee consists of Village cooperatives, cooperative members, and advisers in the villages. It is suggested that these three committees at three different levels promote expansion of the project.

4.5 Agricultural extension

4.5.1 Importance of Practical Training

It is said that farmers are conservative and do not like to change their practices, and it is often observed that common villagers easily follow an idea given by a local opinion leader without any rational judgment. In fact, the farmers in Salakos requested seed garlic of Egaseed-1 only in the village meeting, but all of them changed their minds from it to Sids-40 soon after observation of those two varieties by a leader. On the other hand, the people in El Borgaya did not want to try the intercropping of potato with maize, even though they learned the technique in the classroom.

Farmers have limited information and choices, but they can learn new technology only from seeing or trying by themselves or with neighbors. In the course of the Pilot Project, it was very effective to use real things, photos and illustrations for explanation to farmers, and to provide opportunities of study tours or exchange visits with them. Therefore, the practical training is very important for agricultural extension works.

4.5.2 Coordination among Governorate, District and Village Officers

In the operation of the demonstration farms, a team made of governorate, district and village extension officers performed effectively. In Minia, monitoring has been made by the village extension officers everyday and by district extension officers almost every week. Governorate agriculture officers visited the sites at the important time, with communication with the extension officers. In Assiut, daily support has been made by village extension officers and weekly monitoring has been carried out by district extension officers and a governorate counterpart as well as a researcher of an Agriculture Research Center every weekend.

These close communications among them can lead the farmers' groups to manage the demonstration farms well, though there was room to improve the communications among the extension officers, counterparts and demo-farmers in a few villages. This good experience shall be kept and expanded in further demonstration works.

4.5.3 Two-step Agricultural Extension of New Technology

As new farming technologies always have certain risks and difficulties, they shall be demonstrated by the farmers under strong support of the extension officers. Further, the farmers involved shall be skilled and experienced at a certain level, and not be subsistent famers. The new technologies shall be adopted first by selected farmers. Small-scale farmers, who really need improvement of farming, shall learn the new techniques in the demonstration farm, and gradually adopt in their fields. After a confirmation of effectiveness of the new techniques, some financial support may help common farmers for implementation of them.

4.5.4 Scale and Management of Demonstration Farms

The Project operated demonstration farms on the intercropping method in the previous summer season on three sites with an area of 2 feddan in each governorate. The agricultural engineers of the governorate agriculture directorate visited those sites almost every week to provide technical guidance and necessary input. As far as such operating system is employed, the number of the sites of demonstration farms shall be 3 to 5 sites only in a governorate. In case the district agriculture offices take a greater role in extension works on the demonstration farms under supervision of the governorate agriculture directorate, each district could operate 1 to 2 demonstration sites in a season. Assuming that 2 feddan of farmland is assigned for demonstration on each site, the optimum scale of demo-farms might be 6 to 10 feddan under the governorate initiative, or 20 to 40 feddan at the maximum under the district initiative. This demonstration targeting of marketing improvement is an additional work for the district agriculture office, which implements demonstration farms on major crops such as wheat and maize.

In order to improve a specific agricultural product that is produced on several hundred feddan in a village, the 2 feddan of a demonstration farm might be effective for technical dissemination through farmer-to farmer extension in a season or several seasons. In case of a first trial of a certain technique, on the other hand, the 2 feddan of a demonstration farm seems to be a reasonable size in a balance of impacts and risks.

4.5.5 Agricultural cooperative as an Entry Point of Extension

On the forms of agricultural cooperative board members, basically the leader of each major eela (big family) in the village becomes one of the board members in principle, and there is no vote or a vote

only to approve the candidates. If you check the eela to which each board member belongs, you will find that there is a perfect balance in terms of eela in the village.

To implement extension activity, an administrative line of extension from the Governorate to the District and Village is naturally linked with the village agricultural cooperative as the village extension officer is posted at the village cooperative office. Especially in a traditional village, it is likely that the board members of the cooperative represent the big families (eela) in the village. In this case, when we select farmers to participate in demo-farm, etc., through the cooperative, social balance in the village would possibly be maintained. If this is not the case, for example, if one big family occupies the majority of the board, the proactive action by the administration would be required according to the objective of the extension activity. In any way, the village cooperative could also be an entry point to the village for extension.

4.6 Supporting Farmers' Organization

4.6.1 Utilizing Assets of Agricultural Cooperative as an Entry Point of Rural Development

In the village, agricultural cooperative can be a body to run a business, which requires a certain amount of capital such as agro-processing, since the cooperatives (though not all of them) have capital, assets and staff. In this Pilot Project, the processing unit was established at the agricultural cooperative as the owner and management body. The Delga village cooperative has a building to rent out for gaining a stable income. So does the Rifa village cooperative. Because the agricultural cooperative has assets such as buildings and human resources, it is a merit that the cost sharing with the external supporting agencies or funds for establishing the unit for a certain level is possible for the cooperative, i.e. they would not necessarily depend on full support from the external agencies. Developing the opportunity of investment of the cooperative's asset in the village should be considered to activate the rural economy.

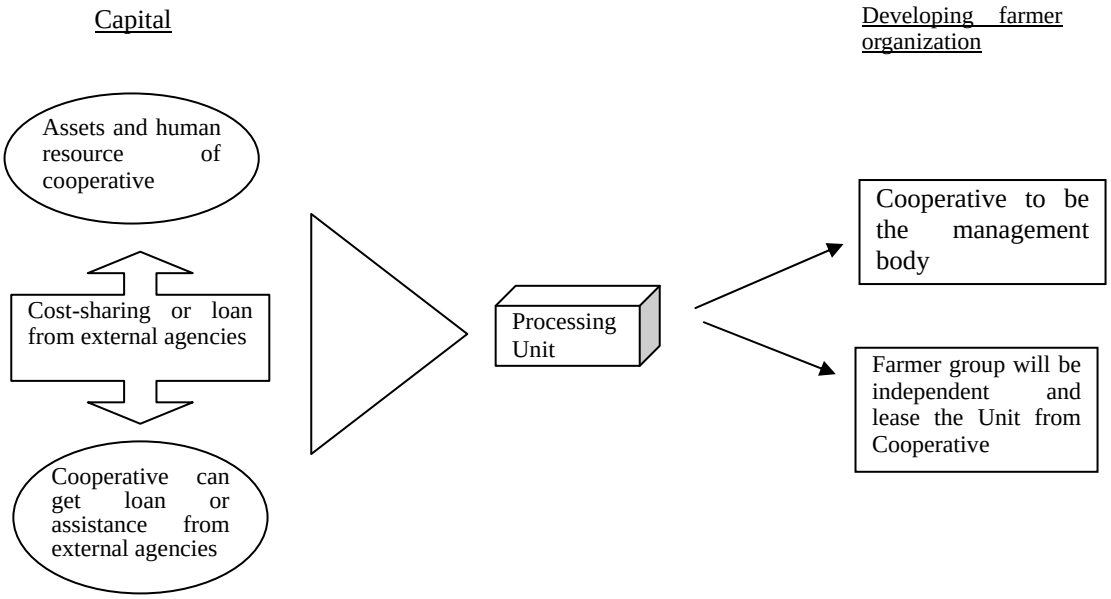


Figure 4.6.1 Cooperative as to Bear Initial Cost to Establish Processing Unit in the Village

On the other hand, in many cooperatives, their activities are limited to input supply and the

cooperative board members are not much involved in the activities. (In a Traditional village, board members are selected to represent from the big families of the village, not necessarily as persons who are active for business). The management capacity of the cooperative, more involvement of cooperative board and farmer members to the activities, and a trustful relationship between members and the cooperative should be strengthened in case the cooperative runs the business. The cooperative can establish a business by using their own capital as long as the members and board members approve. There is an example of business establishment operated by an agricultural cooperative (Milk Processing Factory in Gauda Village and Weight Scale Project in Menpal Village, Minia Governorate)

Fixed Weight Scale Project in Menpal Village, Matai District, Minia Governorate

1. The Purpose of the Project is to measure the carrying capacity of agricultural produce and livestock. The Project was implemented by Village Agricultural cooperative with its own capital. The following is the process of the Project.

2. Proposal: The head of the Village Agricultural cooperative was introduced to a fixed weight scale by traders. He proposed the project to a superagency.
   1) The Project was approved by Cooperative board members and farmer members.
   2) Contributed to cooperative development and its financial management
   3) Cooperative members are given priority to the weight scale service.

3. Approval Process: Proposal to Approval
   Village Agricultural cooperative- District Agricultural cooperatives- Agriculture Directorate- Agriculture Cooperation in Governorate Agriculture Office
   Approval process took about three months. District Agricultural cooperatives and Agriculture Cooperation in Governorate Agriculture Office reviewed the proposal and focused on its accordance with governmental policy. If there is anything necessary to revise, the Agricultural cooperative needed to re-submit again after revising the proposal.

4. Projects implemented by Agricultural cooperatives
   1) Projects implemented by Agricultural cooperatives should be approved by superagencies regardless of its investment amount. In this case, the investment cost was 120,000LE.
   2) All Projects implemented by Agricultural cooperatives have advantages of exclusion from taxation.
   3) 10% of gross income is paid to project staff. There are 10 people who have been involved in this Project: 6 employees, 2 supervisors from Village Agricultural cooperative, and 2 supervisors from District Agricultural cooperative. The rest of the 90% of incomes are saved in a Village Agricultural cooperative account.

4.6.2 Financial Sources of Village Cooperative and Establishing Financial Services

Preparing capital is needed when the agricultural cooperative establishes business to activate the rural economy. According to the Agricultural cooperative Law (Chapter 4, Article19), there are eight possible financial sources for the cooperative such as subscribed capital, capital quota, legal reserve, deposits and savings, any surplus resulting from the activity, loans, local donations, and public subsidies. Among them, except for the annual subscribed capital based on the farmland, income from other sources is actually meager. It is a challenge for the cooperative whether they can manage to collect funds internally from the members. For example, for the price stabilization fund as mentioned above, the key would be building the trust of the farmer members to the cooperative director and management staff for raising internal funds.

If the cooperative has abundantly owned assets, they could plan and construct the post-harvest facility by just getting the approval from the supervising agency, but if not they would have to depend on external loans. Considering the burden to return, they would rather design the small capacity facility

which may not meet the requirement of the market in price, amount to produce and quality. An accessible low interest loan facility should have demand for entities like the small scale village cooperative. There are two new projects: RIEEP by AfDB/SFD and PRIME by IFAD. These projects are equipped with a low interest loan facility and they would be possible candidates for the village cooperatives to access. The Agriculture Directorate should collect and disseminate such information to the agricultural cooperatives.

4.7 Implementation Set-up

4.7.1 Possibility of Committee for Development Activities

As discussed above, the village cooperative can be an entry point to the village, but the cooperative cannot necessarily lead the development activities in the village. In the Pilot Project, we have a case of implementation set-up. The Committee to help demo-farmers sell their produce for Manshyet El Maasra village has been activated by the active leadership of the leader, the head of the District Agriculture Office. If we target only village cooperatives to enhance marketing activity, it seems very difficult to materialize as they are not used to engage in collective marketing of agricultural produce.

As the model case of Manshyet El Maasra village indicates, if we involve not only cooperatives but also stakeholders from the area such as the District Agriculture Office, etc. for instance to form a committee, active movement might happen with higher possibility, because the possibility of involving active person to the activity can become higher by involving multiple organizations and stakeholders in the area in the form of committee. In the case of the committee in Monshyet El Maasra, the head of the DAO appeared as an active leader.

It can be recommended to introduce the committee style implementation to involve the various stakeholders in the area in the development activities such as production improvement, agro-processing, and supporting marketing. The stakeholders would be farmers' groups/agricultural cooperatives, DAO, and if possible traders and retailers, though there is no representative entity for these groups.

It is proposed to organize a committee by the project to consist of the Master Plan, e.g. "Clean Agro-products Promotion Committee", or "xxx village agro-processing business promotion Committee". This committee can include not only the government officers but also the private sector like traders and farmers as in the platform for pubic-private partnership so that the committee can work as a body to promote rural development in an area. Here it is proposed as an implementation set-up to establish a committee for regional development to work as a team of stakeholders who would be an agricultural cooperative, Governorate and District Agriculture Offices, university, research center, and private sector like traders, retailers and farmers and promote the activities such as crop production, agro-processing, marketing (direct shop, matching with traders).

4.7.2 Strengthening of the Ministry Administration

To promote the project, support for agribusiness establishment in the village such as agro-processing, and public-private partnership would be required for the effective and efficient project implementation. For this reason, strengthening the function of the MALR is suggested as follows:

- Coordination for the above proposed committee establishment
- Supporting the establishment of Agri-business (agro-processing) e.g. supporting organization,

business planning, support and information provision for licensing, facility designing, loan facility, provision of technical and management trainings

- Support for making partnership among public entity, private sector and research centers for agricultural extension
- Manage direct shop at Governorate and District Offices, support matching between farmers and traders, support selling quality improved agricultural produce, processed products, making brand

On the discussion with the C/P, those activities could be covered by the activation of the exiting set-up of the Central Administration for Agriculture Cooperation (CAAC). As required, a new section covering the above functions could be established under the umbrella of the CAAC. In the Minia Agriculture Directorate, there is the Rural Women's Development Center established with the assistance of IFAD, which provides training for agro-processing. In the Assiut Agriculture Directorate, the C/P proposes to establish a new section to support the agro-processing business.

4.7.3 Linkages with the Central Government

In the Pilot Project, it appeared that the resources within the Governorate is not enough to implement the development activities, e.g. linkage between the Central Administration for Agriculture Cooperation, the extension administration in the Governorate and Agriculture Research Center in other Governorates or Cairo was necessary. Likewise, the activities such as information collection and dissemination may need to link with the Ministry's initiation with public-private partnership as mentioned above. Also distribution of inputs such as certified seeds, improved varieties, and fertilizers should be able to improve through linkage with the policy enforcement of the Central Administration in Cairo.

4.8 Social Consideration for Project Implementation

4.8.1 Introducing the Exchange Visit among Areas

A distinguishing characteristic of the villages in Minia and Assiut governorates is a lack of movement and exchange with other villages and areas. People work in Cairo or even in Kuwait or Saudi Arabia, but it is usually only temporary and they are either single or they leave their families in the village.

Traditional marriage within *kabela* is still popular, and to marry a cousin or a niece is not unusual. About 20% of the wives in the list of participants come from the Abo Haseeba and El Baragel villages of the Minia governorate, and this is less than 10% in other villages as Table 4.8.1 shows. Almost all the men were born in the village. Some women have never been to Minia City or even Assiut City. They only travel far when they need to visit a hospital. Peer-to-peer learning processes, such as study tours and field visits, could be very effective under the circumstances.

Table 4.8.1 Birthplaces of the Villagers (In the Village / out of the Village)

Workshop Date		12-Jun-10			19-May-10			5-Jun-10			31-May-10			10-Jun-10			14-Jun-10		
Village		Abad Sharona			Abo Haseeba			El Baragel			El Ansar			Naslet El Ablak			Manshyet El Maasra		
Distirct		Maghagha			Matay			Mallawe			El Kosya			Sadfa			El Fath		
Region		Northern			Central			Southern			Northern			Southwestern			Eastern		
Governorate		Minia			Minia			Minia			Assiut			Assiut			Assiut		
Population		10,000			5,000			6,000			14,000			3,000			4,000		
Birthplace of the participants (Male, Female and **Total**)	In the village	125	40	165	42	41	83	68	21	89	37	13	50	43	31	74	21	22	43
	Out of the village	**3**	**0**	**3**	**0**	**9**	**9**	**0**	**4**	**4**	**2**	**1**	**3**	**0**	**0**	**0**	**0**	**1**	**1**
	Out / In + Out	**2.4%**	**0.0%**	**1.8%**	**0.0%**	**22.0%**	**10.8%**	**0.0%**	**19.0%**	**4.5%**	**5.4%**	**7.7%**	**6.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.5%**	**2.3%**

4.8.2 Setting Wages

From the interviews, the Study Team found that there is an example of women in El Baragel Village, Mallawe District, Minia Governorate, where they are earning 2 or 3 L.E. in about five hours for

making rope, with another example of female workers of the factories in Assiut City who are making 150 to 160 LE per month. There is also a successful case of income generation by women in the Minia Governorate, where a woman started a small business of a tameya shop and earns 7 LE per day or 210 LE per month for working every morning and evening.

Men, on the other hand, can bring 500 to 600 LE per month back home if they work in Cairo. There is an example in Abo Haseeba Village, Matay District, Minia Governorate, where a man quit working in Cairo because he found a job at a government bakery and can earn 200 LE per month. 200 LE at home living with his family is better than 500 LE in Cairo for him.

From the new interviews, however, the Study Team found out that the assumption might be wrong. A nursery of tomato and other seedlings at Model Village No.8 in the New Land of the Minia District, Minia Governorate is paying 30 LE per day or 750 LE per month with 25 working days for its female workers. A garlic trader in the Salakos Village, El Edwa District, Minia Governorate, which exports green garlic to Italy and France, is paying as high as 45 LE per day for its female workers. They say that there is labor shortage in these villages and also the work is seasonal, but this show a very high wage level compared to the above example.

Therefore women's wages can vary more than three times depending on the location of the village. There is a big difference between a village which is far away from a town and closed, in which there is no job opportunity for women, and a village which is close to a town, open, in which there are a lot of job opportunities for women. Location of processing units or other facilities to give job opportunities for women and also wage levels need to be decided after careful consideration of these social factors as well as the balance of labor demand and supply.

4.8.3 Selection of Target Villages

It is a part of common-sense that there are three dimensions for urbanization or openness in culture in this region: 1) the distance from Cairo, 2) the distance from Minia or Assiut, and 3) the distance from the district town. If a village is closer to Cairo, Minia or Assiut and the district town, the village is more likely to be relatively urbanized and open. For example, women can work in the field in Abad Sharona and Abo Haseeba of Minia Governorate, but cannot in El Baragel and Delga in Minia Governorate and in all the villages in Assiut Governorate.

Another major factor might be the history of the villages. There tends to be more large-scale farmers from the opening of the villages in old villages; as a result, there are more landless farmers and few small-scale farmers in old villages. There tends to be more small-scale farmers and almost no large-scale farmers in new villagers. It looks like there are stronger ties among the farmers in old villages too.

There are also differences in diversity of people. There are more villagers originally from the south, such as the Aswan and Qena Governorates living in the Old Land along the Nile. Some villages in the Minia Governorate originated in the villages in the Assiut Governorate or the southern villages of the Minia Governorate. In the new villages in the New Land along the desert, on the other hand, there are more villagers originating from Tunisia, Libya and the countries in the Middle East. They use *eela* in the old villages along the Nile and *kabera*, which is a Bedouin word, in the new villages along the desert.

Villages in the Old Land are made of eela in general, but there are also some kabera. Careful consideration needs to be given if the communities are more complicated. To conclude, such social structures of the villages have to be understood before the selection of target villages is made.

4.8.4 Extension System and Rural Society

There are a few cases where the selection of target farmers was a little bit willful because of time constraint and also difficulty in finding willing farmers. Demonstration to the neighboring farmers was not so active either. Are cooperatives recognized fully in the rural community as organizations for agriculture and development of the villages? Are there any other organizations or associations for that purpose? Villagers probably act more as individuals, as households, as extended families and eela, not as members of organizations. It is necessary to consider the social context in the selection of target farmers and extension. Extension can be done more efficiently and equally through the heads of eela and key farmers then to small/micro-scale farmers and landless farmers, still keeping the fundamental line of Governorate – District – Sector/Cooperative. Since village headmen are the heads of the royal eela traditionally, and the board members of the cooperatives are also the heads of major eela, extension through eela is consistent with the structure of cooperatives.

CHAPTER 5 IMPLEMENTATION ARRANGEMENT

5.1 Implementation Set-up

5.1.1 Collaboration among Diversified Stakeholders in Implementation Committee

It is proposed to establish a regional implementation committee involving various stakeholders in regional development when implementing the projects. In the governorate, the practice of committee establishment has been done as an organizational method of the administrations based on the Civil Worker Law (Law No.47/1987) and Local Administration Law (Law No.43/1979). Based on this government practice, it is proposed to establish an implementation committee as public-private partnership (PPP) calling for the participation of farmers, agricultural cooperative, and private companies as much as possible in order to implement the projects which require the collaboration of more diversified entities than usual agricultural technology extension such as agro-processing and marketing support (direct shop promotion and matching producers and buyers). Major participants for the committee are assumed to be farmers' organization/agricultural cooperative, Governorate Agriculture Directorate, District Agriculture Office, research center, university, trader, retailer, private companies for input distribution, and so on.

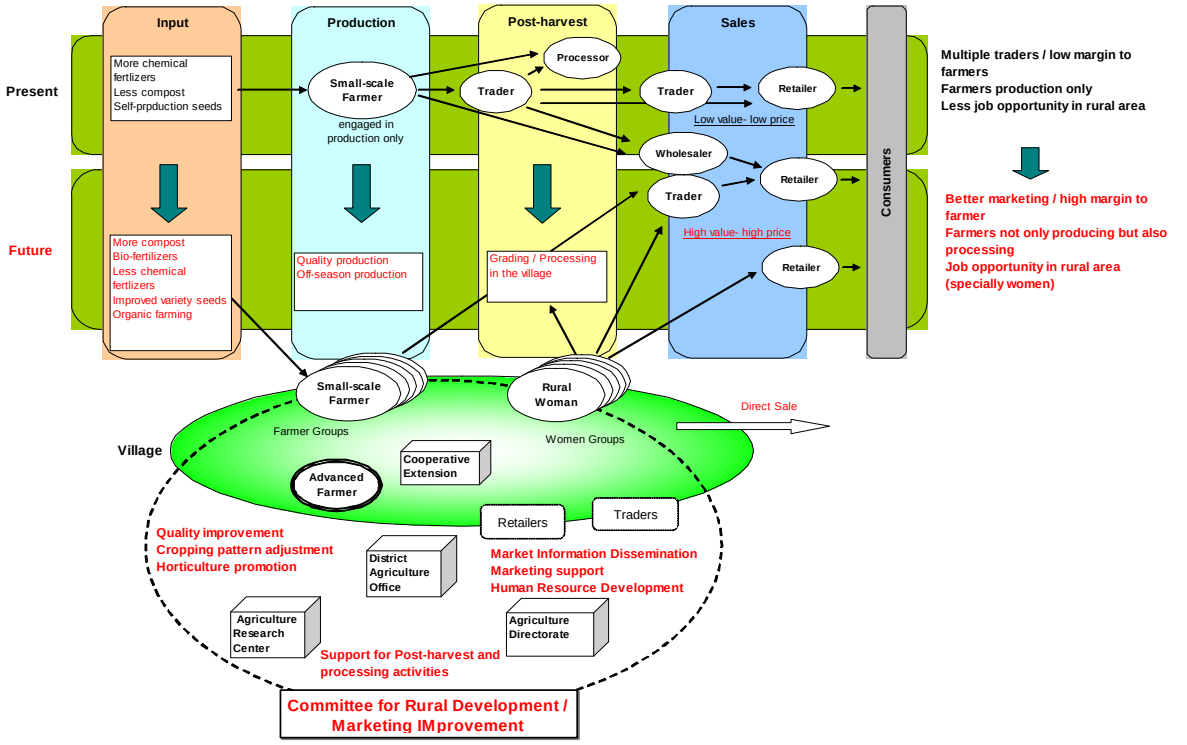


Figure 5.1.1 Participation of Stakeholders in Implementation Committee for M/P

5.1.2 Role and Capacity Development of Governorate Agriculture Directorate

The Governorate Agriculture Directorate (GAD) is the core body of the project implementation. The Directorate works as a coordinator of the committee and to supervise the detail planning and implementation of the projects. For the improvement of input distribution system and production, the department of agricultural extension services under the General Directorate of Agriculture Affairs in GAD and Agriculture Research Center would take the lead.

In the field of agro-processing and post-harvest processing improvement, the Rural Women's

Development Center in Minia can take the role for administering technical trainings. In Assiut, cooperation with an external institution such as a university will be required. Supporting agro-processing business, however, requires not only technical assistance but also assisting business promotion. It is proposed that the GAD should have a function to assist the agri-business promotion such as agro-processing in order to accumulate and utilize the experience of the counterparts through the Pilot Project implementation. In Assiut, the counterparts have suggested establishing an office for promoting agro-processing business as a part of the department of agricultural extension services. The following table shows the strengthening function of GAD and responsible sections:

Table 5.1.1 Role of Governorate Agricultural Directorate and Strengthening its Function

Role	Description	Responsible
Establishing and coordinating committee	Supervise and coordinate the committee	GD for Agr Affair / Agr Cooperative
Strengthening extension services	Support for making partnership among public entity, private sector and research centers for agricultural extension	Dept of Agr Extension Services
Agro-processing (Agri-business) promotion	Supporting the establishment of Agri-business e.g. supporting organization, business planning, support and information provision for licensing, facility designing, loan facility, provision of technical and management trainings	GD for Agr Cooperative or new office under GD for Agr Affairs
Assisting sales	Manage direct shop at Governorate and District Offices, support matching between farmers and traders, support selling quality improved agricultural produce, processed products, making brand	New office under GD for Agr Cooperative or Agr Affairs

5.2 Implementation Plan: Forming Implementation Groups and Combining Projects

5.2.1 Forming Implementation Groups

Effective implementation of the projects with strengthening the function of GAD is required. The proposed development projects are presented along with the value-chain of selling, post-harvest and input/production as well as with the development tactics. Also the projects include cross cutting ones, namely the strengthening of farmers' organizations and extension services, and improving access to rural finance. The components of the projects include institutional setting-up, capacity development of stakeholders, and infrastructure improvement. It is proposed for the effective implementation to group the projects in consideration of the stages of value-chain and the components of each project and form implementation groups with GAD as the core.

The proposed implementation groups are Group A: to collaborate with the PPP in the Central Administration for "Market Information Collection and Dissemination", Group B: the projects at the stage of input/production together with "Strengthening Agricultural extension Services" as a core, Group C: "Strengthening of Farmers' Organization" as a core to be implemented mainly by the agricultural cooperative, Group D: to assist to improve the access to rural financial services, which are essential for business promotion of farmers' organization and introduction of new farming technologies, Group E: to facilitate infrastructure of "Agricultural Input Distribution System", and Group F: to facilitate infrastructure of "Selling Points" to promote marketing.

As for Group C, strengthening farmers' organization, it is divided into two groups: marketing promotion group by the farmers' organization (Group C-1) and a group for promoting agro-processing business (Group C-2). Furthermore, it is most effective if all these groups are implemented in collaboration with one another. Figure 5.2.1 shows the relationship among the implementation groups for collaboration and Table 5.2.1 shows the outline of each implementation group.

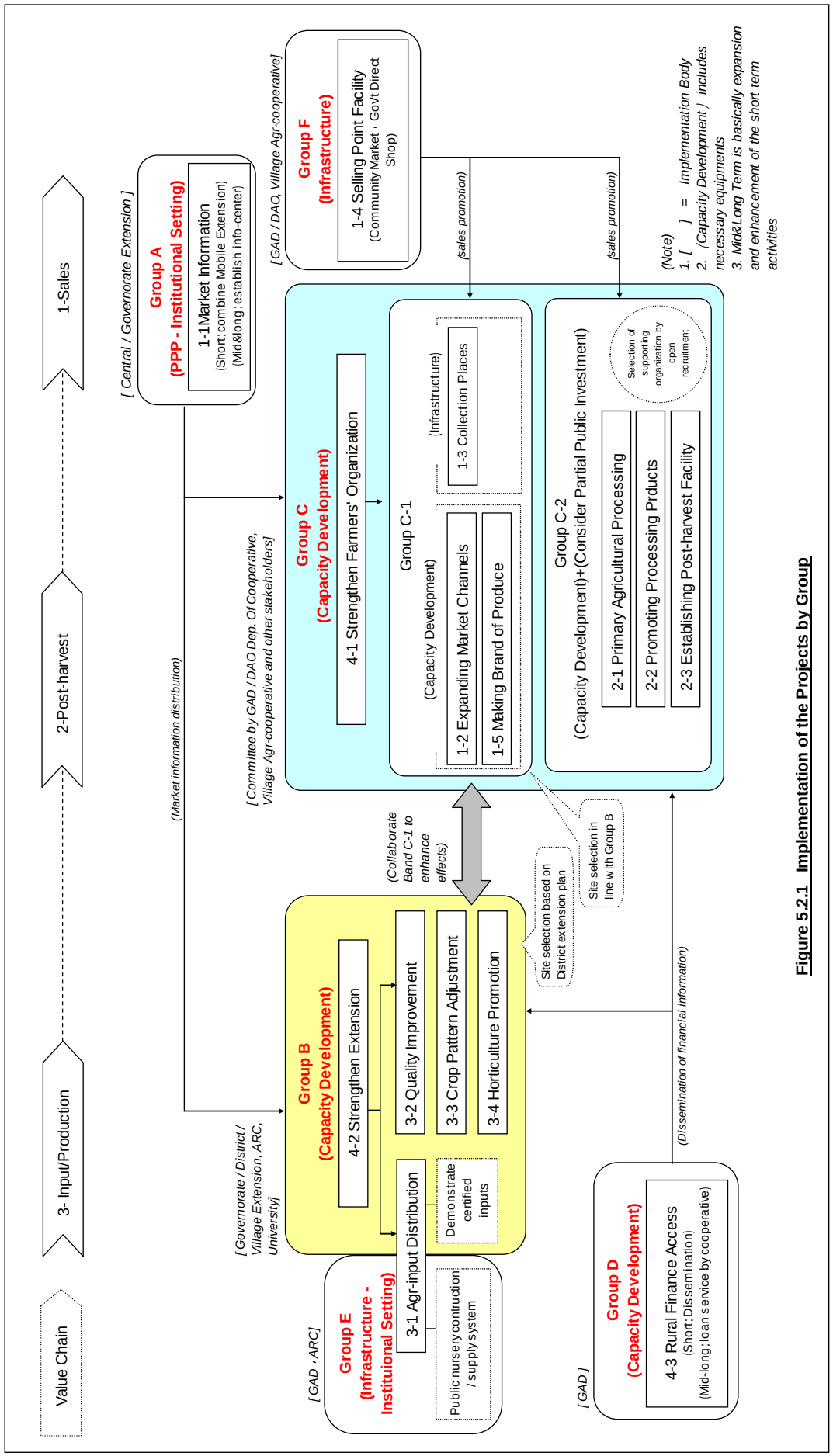


Figure 5.2.1 Implementation of the Projects by Group

Table 5.2.1 Outline of the Projects by Implementation Group

Group	Project	Category	Main Actors	Capacity Development	Direction
Group A	1-1 Market Information System	PPP, Institutional set-up	Central, Governorate Agr. Extension Sector, ARC	—	Already started PPP in MALR will be used to promote this project
Group B	4-2 Strengthening Extension 3-1 Improving Agr. Input Distribution 3-2 Improving Quality of Produce 3-3 Harvesting in Off-season 3-4 Promoting Horticulture	Capacity Development	Governorate / District Agriculture Extension, Village Extension, ARC, Agr. Research Station, University (Minia, Assiut), Farmers Based on existing extension line, to participate in the committee to be formed by the Group C-1	Governorate / District Officers, Extension workers, Farmers	Basically implement by the existing extension line and ARC. It is rather easy to initiate the project as it is based on the existing extension line, but to make more effective implementation, it needs to collaborate with Group C. District Extension Plan should be prepared based on the specialty crops and situation of the small scale farmers in the area and the project site should be selected based on the plan.
Group C					
Group C-1	4-1 Strengthening Farmers' Organization 1-2 Expanding Market Channels 1-5 Making Brand of Agr. Produce 1-3 Facilitating Collection Places	Capacity Development (1-3: Infrastructure)	Governorate / District Agr. Cooperative Sector, Village Agr. Cooperative, Governorate / District Agr. Cooperative Union, Farmers, (Private traders etc.): establish implementation committee with these stakeholders	Governorate / District Officers, Cooperative Officers and Organization, and Farmers	It needs to revitalize the agr. Cooperative. It needs to start with small number of cooperative and expand the activities gradually. It is effective to collaborate with Group B to realize the added-value.
Group C-2	4-1 Strengthening Farmers' Organization 2-1 Promoting Primary Agro-processing 2-2 Promoting Processing Products 2-3 Establishing Post-harvest Facilities	Capacity Development (consider public investment in part of facility)	Governorate / District Agr. Cooperative Sector, Village Agr. Cooperative, Governorate / District Agr. Cooperative Union, Farmers, (Private traders etc.): establish implementation committee with these stakeholders	Governorate / District Officers, Cooperative Officers and Organization, and Farmers	Agr. Cooperative is the entry point of this project. Since the cooperative needs to prepare capital, it needs to take time for capacity development and assist in preparing the business plan and conduct trainings. Partial public investment e.g. drying yard could be considered. The candidate site should be selected by open recruitment
Group D	4-3 Improving Rural Finance Accessibility	Capacity Development	Governorate / District Agriculture Offices	Governorate / District Officers	Collect the information on existing rural finance and hold seminar to disseminate the information. It is relatively easy to start the activity.
Group E	3-1 Improving Agr. Input Distribution	Infrastructure, Institutional set-up	Governorate / District Agriculture Offices, Agriculture Research Station	—	Infrastructure improvement of seedling nursery etc. in the GAD and Agriculture Research Station. At the same time, institutional set-up for supply system will be carried out. It needs fund to improve the infrastructure.
Group F	1-4 Facilitating Selling Points	Infrastructure	Governorate / District Agriculture Offices, Village Agr. Cooperative	—	It is a small scale infrastructure and equipment provision. In the area of Group C, judged with necessity, urgency and sustainability, the implementation will be followed.

5.2.2 Implementation Groups and Implementation Committee

On the above proposed implementation committee, it is proposed that Group C employs the establishment of the implementation committee as this group put the strengthening of farmers' organization as a core. It will be more effective to realize the expansion of markets for value-added products or making brand of agricultural produce if the private traders or retailers participate in the committee to implement the promotion of marketing or agro-processing business by farmers' organizations (agricultural cooperatives). Therefore, it is proposed to establish the implementation committee for Group C-1 and Group C-2.

As for Group B, which focuses on improving the stage of input/production, the basic implementation body would be the existing line of agricultural extension services in MALR, but it needs to develop marketing channels to realize the added-value to the agricultural produce. Hence, it is crucial that Group B should be implemented in collaboration with Group C-1. It is therefore proposed that Group B be collaborated with Group C-1 by being the member of the implementation committee of Group C-1.

5.2.3 Collaboration among Groups to Realize the Benefits of the Projects

As it is proposed above to promote effectiveness of the projects in collaboration with Group B and Group C-1, collaboration with other groups would be required to effectively implement the projects. The following describes the line to realize the project effects by collaboration of the groups.

(1) Group A: Market Information Collection and Dissemination

This group will work on combining the market information into the Mobile Extension Service, which has been started by ARC and CAAE. The information of market information to be accumulated in this project can be utilized by the project "Harvesting Off-season" and "Promoting Horticulture" under the Group B for crop selection.

(2) Group B: Strengthening Agricultural Extension Services

The projects will be implemented in collaboration with the existing line of extension administration and ARC. Based on the survey on the specialty crops and the situation of the small scale farmers in the area, an extension plan per District should be prepared. Based on the plan, the target sites are to apply quality improvement, off-season harvesting, horticulture promotion, and improved agricultural input demonstration. From the viewpoint of effective realization of added-value, this group should collaborate with Group C. The following are the collaborative plans:

"3-3 Quality Improvement Project" aims at introducing improved varieties and/or production technologies to realize the high selling price of the agricultural produce. In order to well realize the benefit, it is required to improve the distribution system of necessary agricultural inputs (Group E "3-1 Agricultural Input Distribution Improvement Project") and also to facilitate a collection place to make grading the produce at the level of producers (Group C: "1-3 Facilitating Collection Place Project").

"3-4 Horticultural Crop Production Promotion Project" is to introduce crop production technology to promote horticulture crops to small scale farmers. To promote the horticulture crop, which requires a relatively big investment in exchange for high profit, it is important to assist small scale farmers to access financing with low interest (Group D: "4-3 Support for Improvement of Agricultural Financial Accessibility").

(3) Group C-1 (Strengthening Farmers' Organization: Supporting Marketing)

Since this group needs to revitalize the agricultural cooperative, it is recommended to start with a small number of target villages and gradually increase the target number. It is effective to collaborate with Group B to realize the added-value. The village agricultural cooperative to be selected to implement the projects in Group B will be the target cooperative, or the village with active cooperative will be recommended for the implementation site of Group B. Collaboration between Group B and C-1 is also required for site selection.

"1-5 Making Brand of Agricultural Produce Project" aims at developing a brand called "Clean Agro-produce" with value-addition by applying bio-fertilizers, which can reduce pesticides so that the produce can become a high grade though it cannot be fully organic produce. This bio-fertilizer application has demonstrated the effect through the Pilot Projects. In order to well promote this project, it is required to integrate the projects from input/production to selling, namely improving the distribution system of bio-materials (Group B and E: "3-1 Agricultural Input Distribution Improvement Project), technical extension using bio-materials (Group: "3-2 Quality Improvement Project"), and promoting the brand at the government direct shops (Group F: "1-4 Facilitating Selling Points").

(4) Group C-2 (Strengthening Farmers' Organization: Agro-processing / Post-harvest Improvement

This group aims at revitalizing the agricultural cooperative as an entry point of rural development by utilizing their assets and assists the groups, which may be grown from the cooperative activities. Since the cooperative needs to procure funds to promote business by itself, it needs to take time to assist their capacity development in business planning and also conduct trainings. To support the cooperative and to procure funding, it would be most effective to collaborate with Group D ("4-3 Support for Improvement of Agricultural Financial Accessibility").

It is also helpful that Group F ("1-4 Facilitating Selling Points) promotes the sales of processed products at the government direct shops to target the local markets (local production-local consumption). It should also be considered to share the investment cost by the public for a post-harvest facility like the drying yard. It is proposed that the target cooperative will be selected by open recruitment.

(5) Group D (Support for Improvement of Agricultural Financial Accessibility)

As mentioned above, the extension of farming technologies at the stage of input/production will be accelerated with the fulfillment of the required funds for small scale farmers to purchase inputs. Funds are required for the investment cost of agri-business promotion at the stage of post-harvest and for the capital to purchase agricultural produce from farmers when the agricultural cooperative organizes the collective shipping of the produce as in contract farming to expand market channels. To meet such a financial demand, Group D collects information on the available financial sources and holds seminars to disseminate them to the villagers thereby contributing to Group B and Group C.

(6) Group E (Agricultural Input Distribution Improvement: Infrastructure)

This group implements the improvement of infrastructure and institutional setting-up of GAD and Agriculture Research Station to improve the supply system of agricultural inputs, which are required for promoting Group B "Quality Improvement" and Group C "Making Brand of Agricultural Produce".

(7) Group F (Facilitating Selling Points)

This group aims at constructing small scale infrastructure and providing equipment to facilitate selling points in order to promote the local production-local consumption. Constructing community market can be implemented independently but it is effective to implement the project at the place where the projects under Group C are implemented, i.e. the necessity, urgency and sustainability are judged high.

5.3 Priority Projects

The C/P of each Governorate has indicated the priority projects. In the Assiut Governorate, the projects related to agro-processing have been taken as the first priority followed by the project of "Making Brand of Agricultural Produce" using bio-materials (including the improvement of an input distribution system). As for the Minia Governorate, the projects related to sales promotion such as "Expanding Market Channels" have been given the first priority followed by agro-processing and then horticulture promotion.

For the implementation of the Pilot Projects, the higher number of agro-processing and post-harvest improvement project sites were allocated more in Assiut than in Minia considering the existence of a prevalent area of specialty crops such as pomegranate and basil in Assiut. The C/P in Assiut, therefore, has considered that supporting the processing units to be sustainable is the urgent issue. Also they emphasize the importance of utilizing agricultural residue and put high priority in improving agricultural input distribution improvement including the utilization of bio-materials.

Most of the C/P members in Minia belong to the General Directorate of the Agricultural cooperative and there is a newly established specialized cooperative for marketing activity (Agricultural cooperative for Finance), which the Directorate supervises. These facts indicate that the C/P is keen on assisting the agricultural cooperatives to engage in marketing activities. The C/P recognizes the importance of reconsidering the role of agricultural cooperatives in marketing agricultural produce. The C/P also puts high priority in strengthening extension services to promote utilization of bio-materials and horticulture production.

Considering the experiences from the Pilot Projects as well as the prioritization of the C/P in the Governorates, capacity development of the stakeholders such as small scale farmers is crucial. It is, therefore, proposed to put Group B (strengthening extension services) and Group C (strengthening farmers' organization) in the highest priority. Group A (Market Information Collection and Dissemination) has already been implemented at the Central Administration of the Ministry as PPP. This group should take action for internal institutional setting-up within the Ministry to incorporate the market information dissemination to the Mobile Extension Service. Group E (Agricultural Input Distribution Improvement) and Group F (Facilitating Selling Points), which consist of infrastructure improvement and institutional setting-up, will be implemented according to the progress of Group B and C. Group D (Improvement of Agricultural Financial Accessibility) should start information collection and dissemination activities so as to support the extension of farming technologies in Group B and agri-business promotion in Group C. It is also recognized that early improvement of input supply system is effective for promoting the brand making of agricultural produce. Therefore, it is proposed to establish the production laboratory of bio-control materials in Assiut Governorate as a part of Group E (Agricultural Input Distribution System) as soon as the Group B starts implementation.

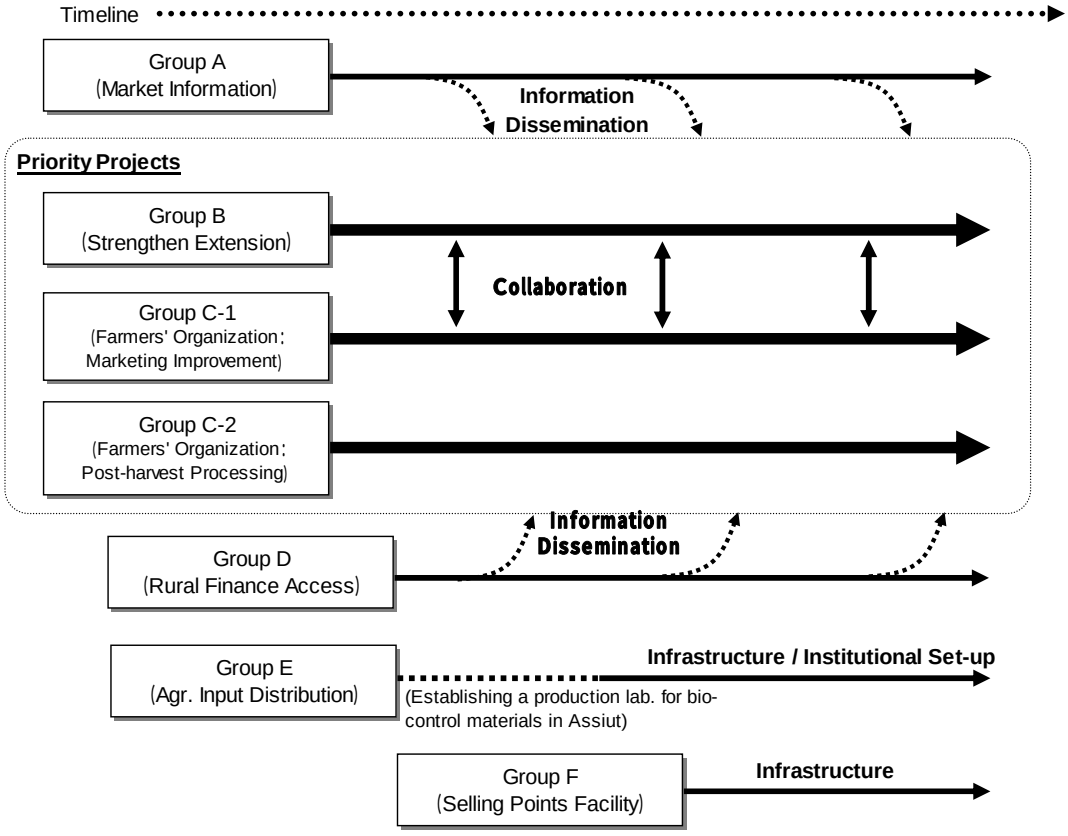


Figure5.3.1 Priority Projects and Implementation Schedule

CHAPTER 6 ACTION PLANS

The Action Plan of each of the above named Projects is proposed. The Action Plan consists of the target crops, target area, outline of the project, activities to be taken in short and mid & long term, responsible agencies and agencies to cooperate. As proposed above, the projects should be implemented in combination with another.

6.1 Establishing a Market Information Collection and Dissemination System

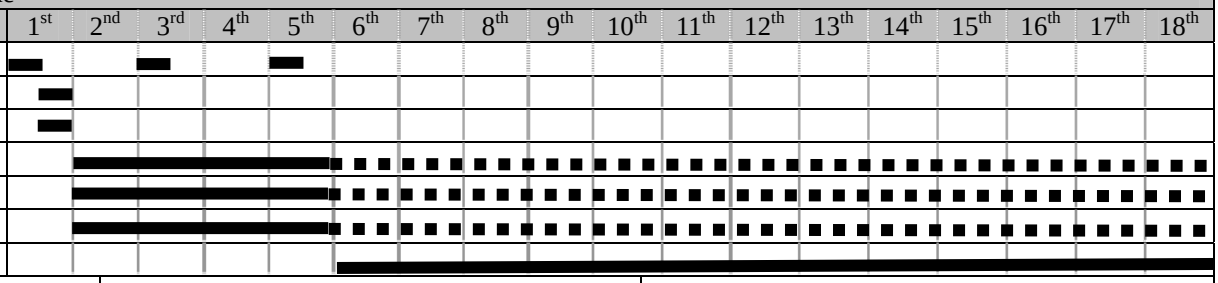
Project (1-1)	Establishing Market Information Collection and Dissemination System
Objective: To support farmers for their marketing of agricultural produce by providing market information.	
Project Description: This project is to establish a system to collect market information useful to the small scale farmers and disseminate it in an efficient way to the small scale farmers by the administration. Assumed useful information is the market price of major crops and specialty crops and the list of buyers including traders, processing companies, and exporters, etc. With the daily market price, the farmers would know the level of the consumer price and wholesale price in the market so that they could refer to it when they negotiate with traders on their transaction. A list of buyers would help farmers find buyers who could buy their produce with better conditions. This activity is planned to combine with the Mobile Extension Services (SMS utilization and hotline), which was launched in 2011 between the ARC/the Central Administration for Agricultural extension and the private mobile companies. Information would also be put on the signboard of the village agricultural cooperative. At the Governorate level, the Agricultural extension Sector has started collecting the market prices of major crops in selected local markets since 2011. Collection of price data can also be delegated to the initiative of the Agricultural extension Sector. Not only SMS but also other media such as TV broadcast could be utilized. MALR has also started a TV channel for agriculture information, in which wholesale price information of Obour in Cairo and Hadra in Alexandria are shown on the channel. Wide dissemination of the information could be through such multiple media. In mid and long term, the establishment of an information center will be considered. The information center can serve as a library of the farmers to seek for information they want.	
Target Beneficiary	Small scale farmers in the Governorates, Agricultural cooperative.
Target Crops	Major horticulture crop
Expected Outputs	Small scale farmers in the Project Governorates can easily access to market information. Small scale farmers can practice crop cultivation considering what to grow and wehre to sell based on the market information.
Implementation Agencies	CAAE and GDAA Extension Sector of GAD GD of Agriculture Cooperation in the GAD

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]

Target		Building in the price information to the mobile extension service Send the village cooperatives in the Governorates (342 cooperatives in Minia, 250 cooperatives in Assiut)	
Activities		Contents	Agencies
S-1	Information Assessment	Assess the needs of farmers in marketing to identify information to collect.	GAD
S-2	Building collection system	Establish the information collection system: the activity launched by the Agricultural extension Sector is used.	GAD Extension Sector
S-3	Building dissemination system	Discuss and agree with combining price information to the mobile extension service by the CAAE/ ARC and private companies.	CAAE
S-4	Collection and Dissemination	Combine the collection by Agricultural extension and mobile extension service and make it to be routine work.	GAD, CAAE, VAC
S-5	Database building	Build up data base on PC	GAD Extension Sector
S-6	M&E	Monitor the work and periodical evaluation for improvement	GAD, DAO, VAC

(1-1 Establishing Market Information Collection and Dissemination System)

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]			
Target	One information center in each District (9 in Minia, 11 in Assiut)		
Activities			
ML-1	To establish information center in each District for farmers to seek for information by themselves. PC will be installed to help farmers to access internet. Necessary training and guidance for information collection for farmers will be administered.		
Timeframe			



Inputs	Short Term	Mid & Long Term
	Whiteboards in each cooperative Stationery Price collection: covered by officers duty Price sending: covered by private company Trainings	PC 5 units, printer, office utensils Room furnishing training/vouchers
App. Cost	Whiteboard LE300 Stationery LE100 Minia: LE400* 339 coop. = LE135,600 Assiut: LE400* 247 coop. = LE98,800 (Pilot Sites are excluded as they have been equipped) Trainings: Minia: LE24,000, Assiut LE30,000 Minia: LE159,600 Assiut: LE128,800 Total: LE288,400	(Minia 9Districts +1Governorate), (Assiut 11Districts +1Governorate) PC: LE 9000* 5 Printer LE2000 Office utensil: LE1000 Office furnishing: LE10,000 Training LE2,000 Voucher: LE1000 Minia: LE610,000 Assiut: LE732,000 Total: LE1,342,000

GAD: Governorate Agriculture Directorate, GDAA: General Directorate of Agriculture Affairs, DAO: District Agriculture Office, CAAE: Central Administration for Agricultural extension, VAC: Village Agricultural cooperative, GD: General Directorate

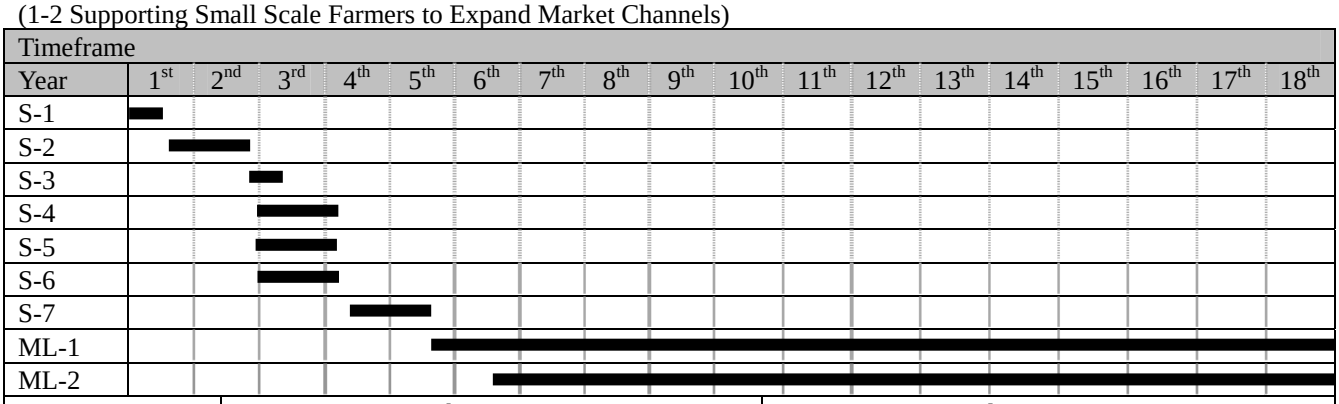
6.2 Supporting Small Scale Farmers to Expand Market Channels

Project (1-2)	Supporting Small Scale Farmers to Expand Market Channels
Objective: To support farmers for diversifying the market channel to obtain more opportunity to sell their agricultural produce at a higher price.	
Project Description: Expanding market channels for small scale farmers would help them for fair negotiation to sell their produce and also give the possibility to sell their produce at good prices. To expand the market channels of small scale farmers, it is proposed to revitalize agricultural cooperative for marketing. For this activity, the cooperative will contract with farmers in their village to collect and sell the produce. The farmer is not necessarily the member of the cooperative as long as they agree with the condition. At the harvesting period, the cooperative will collect the produce and transport the produce by truck which the cooperative is to hire. After selling the produce, the cooperative takes a commission and the rest of the profit will be paid to the farmers. If the village agricultural cooperative tried to engage in collective shipping of agriculture produce, they would need such arrangements for success as securing where to sell, i.e. contract farming or giving low interest finance to farmers as the finance by the traders/middlemen to the farmers prior to cultivation has been prevalent. The village multi-purpose agricultural cooperative could also be the window of the private companies to seek for the group of farmers to get into contract farming. In the mid and long term, it is proposed to develop an advanced cooperative to get into more variety of business, including grading, packaging.	
Target Beneficiary	Small scale farmers in the Governorates, Agricultural cooperative.
Target Crops	Horticulture crop
Expected Outputs	Village Agricultural cooperative is engaged in marketing of agricultural produce and contributes to expanding the marketing channel of the small scale farmers and the increase and stabilization of their income.
Implementation Agencies	Village Agricultural cooperative, GD of Agricultural cooperative, District Cooperative

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		Revitalize village agricultural cooperative in 1 village per District (9 villages in Minia and 11 villages in Assiut)	
Activities		Contents	Agencies
S-1	Assessment of cooperatives	Assess the present situation and willingness of cooperative and identify candidate cooperative to support	GDAC, DAC
S-2	Agreement with the board of cooperative	To get the agreement among the members of cooperative to initiate the marketing activity.	GDAC, DAC, VAC, SC
S-3	Management training	Administer training for managing marketing activity	GDAC
S-4	Communication with private companies	Collect information of private companies and contact to them and agree for contract farming	GDAC Agribusiness companies
S-5	Introduction to farmers	Cooperative is to be an agent to introduce the companies to farmers in the village for the contract farming and assist farmers in forming a group as required for contract farming.	GDAC, DAC
S-6	Fund raising	Village cooperative is to raise fund for loan for the farmers and price stabilization fund. Possibility of both internal and external fund will be studied.	GDAC, DAC, VAC
S-7	Collection & shipment	Make contract with small-scale farmers and agree with conditions and collect produce at harvesting time and ship them to market by cooperative.	GDAC, DAC, VAC

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	Revitalize 5 VAC per District (45 VAC in Minia and 55 VAC in Assiut) Nurture 3 VAC (Union) per Governorate to engage in multi business
Activities	
ML-1	Expand the implementation of above short term plan, and active cooperative could be developed to run a post-harvest and marketing center.
ML-2	Assist the village agricultural cooperatives which are active through the Short term activity for further developing the business (processing, storage, direct shop etc.)

(1-2 Supporting Small Scale Farmers to Expand Market Channels)



Inputs	Short Term	Mid & Long Term
	Training Meeting with VAC (Transportation etc.) Crates (720 pieces: LE15,000) Weighing machine (LE4,000) Transport equipment (LE2,000) Initial operation cost (to buy produce from farmers: use capital of cooperative, assist from Governorate / District Cooperative Union) Construction of collection place (Project of 1-3)	Cost for expansion of Short term activity: Cost for supporting cooperative (transport, training, equipment etc.) Cost for Nurturing multi business Agr. Cooperative: Agro-processing unit (grading, packaging, processing, storing, direct shop), initial operation cost (access to loan: SFD, ARDF etc.)
App. Cost	Training: LE11,000 (General) Per village: Meeting with cooperative: LE2,000 Crates: 720pieces: LE15,000 Weighing machine: LE4,000 Transport equipment: LE2,000 Minia: LE218,000 Assiut: LE264,000 Total: LE482,000	Cost for expansion of Short term activity: Minia: LE828,000 Assiut: LE1,012,000 Total: LE1,840,000 Cost for Nurturing multi business Agr. Cooperative: Training: LE1,500x5times x 6 villages: LE45,000 Facility Unit: LE200,000 / site (use loan by cooperative)

GDAC: General Directorate for Agriculture Cooperation, DAC: District Agricultural cooperative, SC: Specialized Cooperative

6.3 Facilitating Collection Place in Villages

Project(1-3)		Facilitating Collection Place in Villages	
Objective: To support farmers to engage in collective production and shipping to get the scale-merit of economy			
Project Description: To help small scale farmers organize themselves to collect their produce and sell together, it is planned to furnish collection places in the village. Such a collection place will be set using the space of a village cooperative if available. If not, cooperation with the Governorate/local unit would be required to acquire the land for it. In this Master Plan, it is planned to establish the collection place to be managed by the village agricultural cooperative as to promote above expanding market channels and quality improvement (3-2) .			
Target Beneficiary		Small scale farmers in the Governorates, Agricultural cooperative.	
Target Crops		Horticulture crop	
Expected Outputs		Contribute to increasing income of farmers by promoting collective shipping of quality produce by grading.	
Implementation Agencies		VAC, GDAC, DAC	
Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		1 site per District (9 sites in Minia and 11 sites in Assiut)	
Activities		Contents	Agencies
S-1	Orientation for use	Explanation to the villagers on the objective of the collection place and setting regulation for use by agricultural cooperative.	GDAC, DAO
S-2	Identification of site	Site identification: whether to renovate the premise of village cooperative or acquire land.	GDAC, DAO, GAD
S-3	Construction	Design and construction	GDAC
S-4	Dissemination to traders / farmers	Disseminate the use of place for traders and farmers.	GDAC, GAD, DAO
S-5	O & M	Managed by cooperative and supervised by extension engineers	GDAC, DAO
Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]			
Target		5 sites per District (45 sites in Minia and 55 sites in Assiut)	
Activities			
ML-1	Proceed the construction of the collection place in line with the progress of 1-2 Expanding Market Channels and 3-2 Quality Improvement.		

Timeframe

Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-1																		
S-2																		
S-3																		
S-4																		
S-5																		
ML-1																		

Inputs	Short Term	Mid & Long Term
	Collection Place (20mx20m)	Collection Place (20mx20m)
App. Cost	Collection Place: LE47,000/site Minia: LE423,000 Assiut: LE517,000 Total: LE940,000	Collection Place: LE47,000/site Minia: LE1,692,000 Assiut: LE2,068,000 Total: LE3,760,000

6.4 Facilitating Selling Points

Project (1-4)	Facilitating Selling Points: Community Market, Direct Shop

Objective:
Increasing the selling points in locality and support expanding the sales of value added products, community markets and government direct shops will be facilitated.

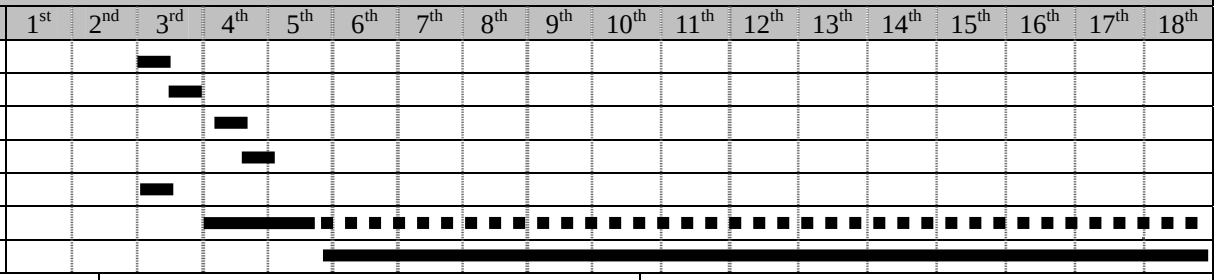
Project Description:
There are very often cases where the rural women form market places for vegetables along the road. For these cases, it is planned to pave the village road, which is also used as a market place in order to improve the hygienic condition so that the sales of the produce there is expected to be better. In case there is a place owned by the village cooperative, that place can be used for the market place by concrete pavement.
As for direct shop facilitation, it is planned to establish a direct shop at the village cooperative and district agriculture office and promote the high quality agricultural produce or processing products which will be planned below by selling at the direct shops. Direct selling at these offices is planned to promote the sales of local produce.

Target Beneficiary	Small scale farmers in the Governorates, Rural Women, Agricultural Cooperative
Target Crops	Horticulture crop, Processed products
Expected Outputs	Amount of transaction is increased by community markets and loss at the market will be reduced by hygienic improvement of the market. Value-added produce will be recognized by promoting them at the direct shops
Implementation Agencies	GDAC, GDAF Extension Sector

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		Community Market: 1 site/ District (9 in Minia and 11 in Assiut) Direct shop: 1 in Minia Governorate, District (9 in Minia and 11 in Assiut)	
Activities		Contents	Agencies
S-1	Orientation for use	Explanation to the villagers on the objective of the collection place and setting regulation for use.	GDAC, DAO
S-2	Identification of site	Site identification: whether to renovate the premise of village cooperative or acquire land.	GDAC, DAO, GAD
S-3	Construction	Design and construction	GDAC
S-4	Dissemination to villagers	Disseminate the use of place for villagers especially women.	GDAC, DAO
S-5	O & M	Managed by cooperative,	GAD, DAO
S-6	Establishment of direct shop	Establish and operate by District Agriculture Office and Governorate Agriculture Office	GDAC, DAO

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	Community Market: 5 sites / District (45 in Minia and 55 in Assiut)
Activities	
ML-1	Expansion of the project in the Governorate

Timeframe



Inputs	Short Term	Mid & Long Term
	Road pavement (200m x 5m) or Coop. land (20m x 30m), Governorate, District direct shop	Road pavement (200m x 5m) or coop. land (20m x 30m)
App. Cost	Community Market: LE70,000/site Direct Shop: LE10,000/site Minia: LE730,000, Assiut: LE880,000 Total: LE1,610,000	Community Market: LE70,000/site Minia: LE2,520,000 Assiut: LE3,080,000 Total: LE5,600,000

6.5 Making Brand of Agricultural Produce

Project (1-5)		Making Brand of Agricultural Produce (Bio-fertilizer Utilization)	
Objective: Increase of yields by input of bio-fertilizers and compost			
Project Description: The bio-fertilizers introduced by the study team have been verified for their effectiveness on upgrading the quality of products, increasing of farmer's incomes and reduction of chemical fertilizers/pesticides. Many farmers request easiness to procure bio-fertilizer, and the leading extension officers recognize organic or semi-organic farming as a mission of activities. The project aims at expansion of the technology to farmers including compost making and creation of efficient and timely distribution of bio-fertilizers.			
Target Beneficiary		Farmers	
Target Crops		Field crops, horticultural crops and fodder crops	
Primary Target Area and Extension Plan			
Minia 1st Priority: Matay, Abu Sherona, Abo Kurkas, Minia 2nd Priority: Other districts		Assiut 1st Priority: Koseiya, Abnoub, Dairout 2nd Priority: Other districts	
Expected Outputs		Increase of distribution of bio-fertilizers Increase of farmers or farms using bio-fertilizer Reduction of chemical fertilizers/pesticides	
Implementation Agencies		Bio-fertilizer Center, Faculty of Agriculture, Minia University, Agricultural Extension Officers, Village Agricultural Cooperatives	
Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		Farmers	
Activities		Contents	Agencies
S-1	Selection of distributors	Key persons as official distributors are selected and evaluated from agricultural extension officers, representative of village agricultural cooperatives, private distributors and leading farmers (including retired agricultural officers)	GAD
S-2	Selection of demonstration farm	The demo farms are selected under extension strategies to function as farmers' schools at the village level and collect information of affecting pests and available seedlings.	DAO
S-3	Training of stakeholders	Based on technical manual, the official distributors are trained.	Stakeholders
S-4	Advisory service to beneficial farmers	Growth of crops is inspected by the distributors. Field trips of demo farms are conducted. Monitoring results and harvested crops are presented in Agricultural Shows.	Stakeholders
S-5	Opening of bio-shops	District agricultural offices open bio shop dealing with bio-fertilizer at district level.	DAO
S-6	Rules of Local GAP	Local GAP for farming of bio (or clean) products by crop is drafted up. Seminars are held by agricultural officers.	GAD
S-7	Selling at Direct Shops	Making brand by selling as the Clean Agro-produce at the direct shops (collaborate with the project 1-4)	GAD, DAO
Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]			
Target		Agricultural Officers	
Activities			
ML-1	Local GAP is enacted and Agricultural Directorate start to issue certificate for farmers (including peasant) and farms, also bio-shops in village level. Retailers dealing with bio products are also certified.		
ML-2	Enlightenment of food safety to farmers, traders and urban consumers is conducted through TV program, radio or demo farms.		
ML-3	The factory producing microorganisms is strengthened in the production capacity.		
ML-4	Contract farming with local farmers and processing companies/large scale supermarkets is promoted by provision of private sector partnership meeting.		
ML-5	District Agricultural Offices promote bio-fertilizers to farms in desert lands in order to increase production of wheat, maize, berseem and other suitable crops.		

(1-5 Making Brand of Agricultural Produce (Bio-fertilizer Utilization)

Timeframe																		
Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-1																		
S-2																		
S-3																		
S-4																		
S-5																		
S-6																		
S-7																		
ML-1-6																		

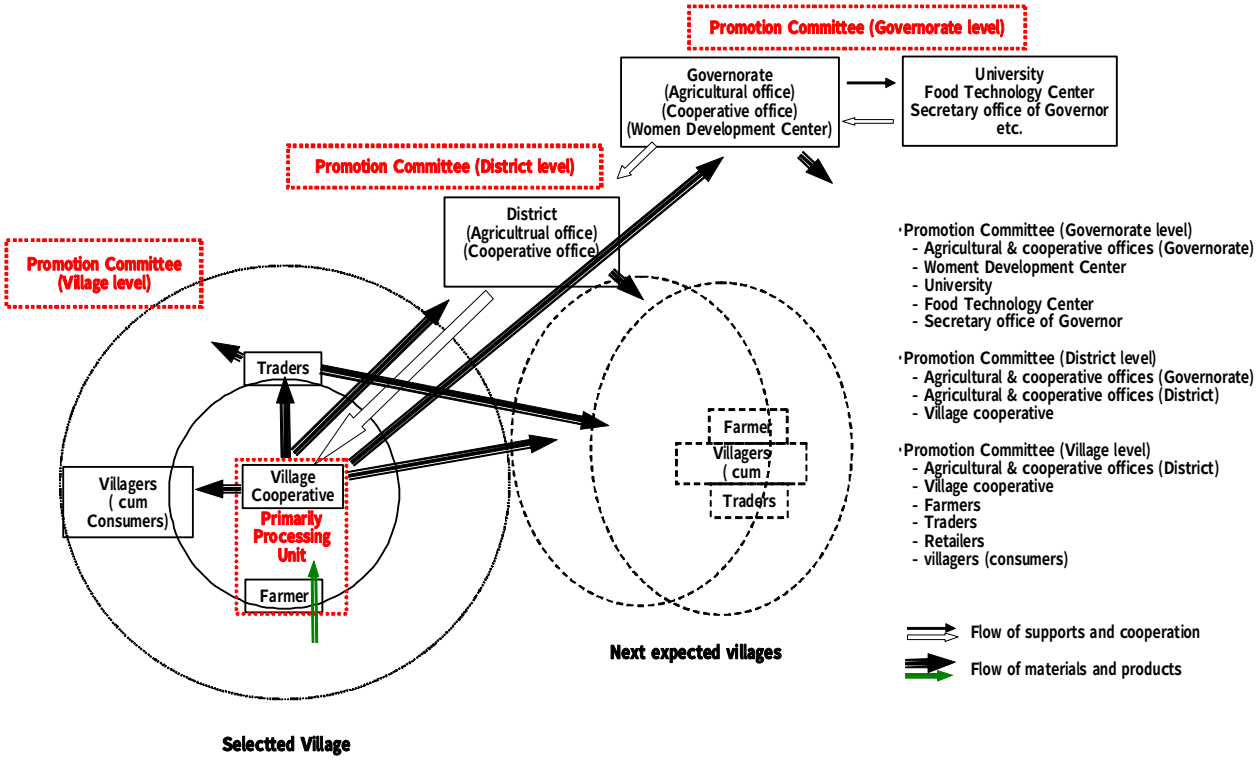
Inputs	Short Term	Mid & Long Term
	Experts (Bio-Fertilizer, Microbiology, GAP, Marketing, Lawyer) Production Assistant Agronomists cum Distributors Demo Farm Operation Bio-fertilizer, transportation, seminars, training, compost stalk cutting machine Materials for extension, demo farm, bio shop, agricultural show, multiplication of microorganisms	Experts (Microbiology, GAP, Agronomist for each target produce, Public relation, Bio-fertilizer, Organic farming) Production Assistant Agronomists cum Distributors Demo Farm Operation Bio-fertilizer and other materials Mini-plant of production of microorganisms
App. Cost	LE3,000,000	LE4,500,000 - LE7,500,000

6.6 Promoting Primary Agricultural Processing

Project (2-1)	Promoting Primary Agricultural Processing (Adding Value to Produce)

Objective:
To expand the market channel of agricultural crops grown by the small-scale farmers, it is proposed for farmers to primarily process their horticultural crops and to sell in and around villages taking into consideration the producing and consuming in the villages.

Project Description:
1. The village cooperative manages and operates the unit.
2. The unit produces various agricultural products using the agricultural crops grown in the village.
3. The unit is for making of pickles, dried vegetable, or frozen vegetable, etc. or their combination.
4. Farmers in the village participate to the unit operation and supply the low materials.
5. Traders and retailers in the village participate to sell the processed products.
6. District and governorate offices conduct the technical and advisory supports.
7. Related agencies support the district and governorate offices.



Target Beneficiary	Village cooperatives, Small scale farmers
Target Crops	Onion, Carrot, Cucumber, Lemon, Olive, etc.
Expected Outputs	・ Establish the organization in the unit by stakeholders ・ Conduct continuous operation by the village cooperative
Implementation Agencies	・ Village cooperative ・ Responsibly and supporting agency: Governorate and district offices

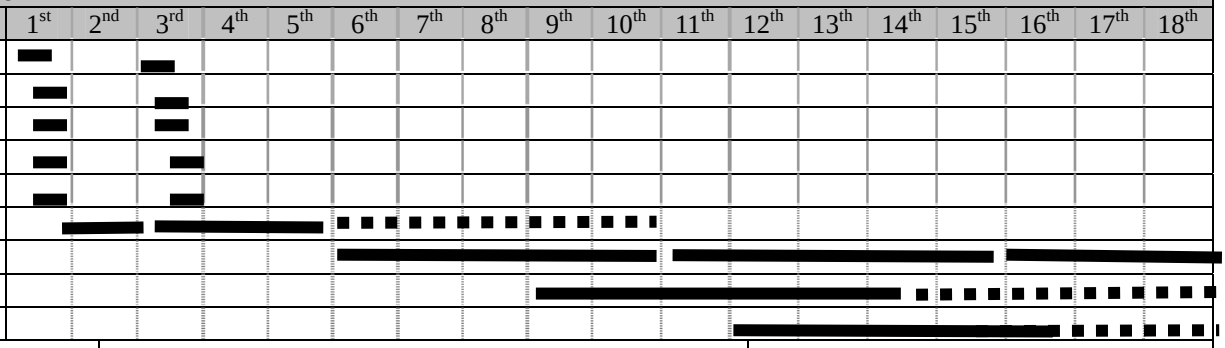
(2-1 Promoting Primary Agricultural Processing (Adding Value to Produce)

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		・ Establish the unit in the around 12 villages in 6 districts in the shot term by step by step. ・ Continuously operation	
Activities		Contents	Agencies
S-1	Assessment of present situation	・ To establish the promotion committee at the governorate level for promoting primary agricultural processing. ・ To find out various horticultural crops for processing unit and examine which areas and which crops are mainly grown, and put on the priorities.	GPC (GAD&GDAC, WDC, SOG, University)
S-2	Selection of place	・ To select the district and village to be promoted by means of opening the seminar, workshop, etc. ・ To establish the district and village promotion committees. ・ To select a convenient place and a proper size of room to repair for the unit and to procure the equipment for processing crops. It is preferable to select the place owned by the village cooperative for O&M.	DPC (GAD&GDAC, DAO&DCO,) VPC (VAC, Farmers, Villagers, Traders)
S-3	Designing of plan	・ To design the processing unit to process with one processing unit for effectively yearly usage, with holding the village level workshop. ・ To make a yearly operation and maintenance plan and procedure. ・ To estimate the cost-benefit ratio for the unit according to the plan. ・ To hold the village level workshop to confirm the design, crops and processing unit ・ To obtain the budget from government own budget, loan, investment by personnel or agency, or aid, etc. for initial investment cost, working capital (for around 3 months) and contingency for minor change.	GPC, DPC, VPC
S-4	Setting up of operation organization	・ To set up an organization for managing, operating and maintaining the unit, with a technical and advisory supporting system by the related agencies, such as district and governorate offices, food technology center, university, etc. ・ To hold the village level workshop to confirm the organization, and cooperation & participation among the stakeholders. Especially, to confirm that the village cooperative operates with ownership, and small-scale farmers, traders and consumers actively participate to the activities.	DPC, VPC (supported by GPC)
S-5	Implementation of construction and procurement for the unit	・ To select the contractor and supplier for the unit. ・ To check and monitor the progress of the works by the contractor and supplier. ・ To confirm the completion for the unit	DPC VPC (supported by GPC)
S-6	Operation and maintenance (O&M)	・ To transfer the technologies to the village cooperative and expected workers of the unit about the processing and business management in cooperation with the related agencies, at the beginning of starting operation. ・ To conduct the operation and maintenance according to the plan ・ To conduct the monitoring & evaluation (M&E) by the district and governorate offices in cooperation with the related agencies.	VAC (supported by VPC, DPC & GPC)

(2-1 Promoting Primary Agricultural Processing (Adding Value to Produce)

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	・ To expand to other villages which have expected crops. ・ To set-up the official standards of technically processing methods for hygiene and quality ・ To set-up the GIP (good industrial practices) and application system and introduce HACCP
Activities	
ML-1	To expand to the other villages according to the experiences during short term around 12 villages per 5 years
ML-2	To set-up the official standards of technically processing methods for hygiene and quality
ML-3	To set-up the GIP and application system and introduce HACCP

Timeframe



Inputs	Short Term	Mid & Long Term
	1. Workshop & Seminar (around 5 times) 2. Repairing room (around 40m^2 +add. store 10 m^2) 3. Procurement of equipment 4. Technical training (around 5 times) 5. Business training (1-2 times) 6. M&E (every 1-2 months x 5 years)	As the same as the short term per 5 years.
App. Cost	1. Workshop & Seminar 5 times: LE7,500 2. Construction(repairing room): LE35,000 3. Equipment: LE35,000 4. Initial running cost: LE9,000 5. Contingency (10%): LE7,000 6. Technical training 5 times: LE2,500 7. Business training 2 times: LE3,600 8. M&E: LE6,000 Sub-total per village: LE105,600 2 and 3 will be borne by the business entity (cooperative) Cost excluding 2 and 3: LE35,600 Total 12 villages: LE427,200	6-10 years: LE427,200 11-15 years: LE427,200 16-20 years: LE427,200 Total: LE1,281,600

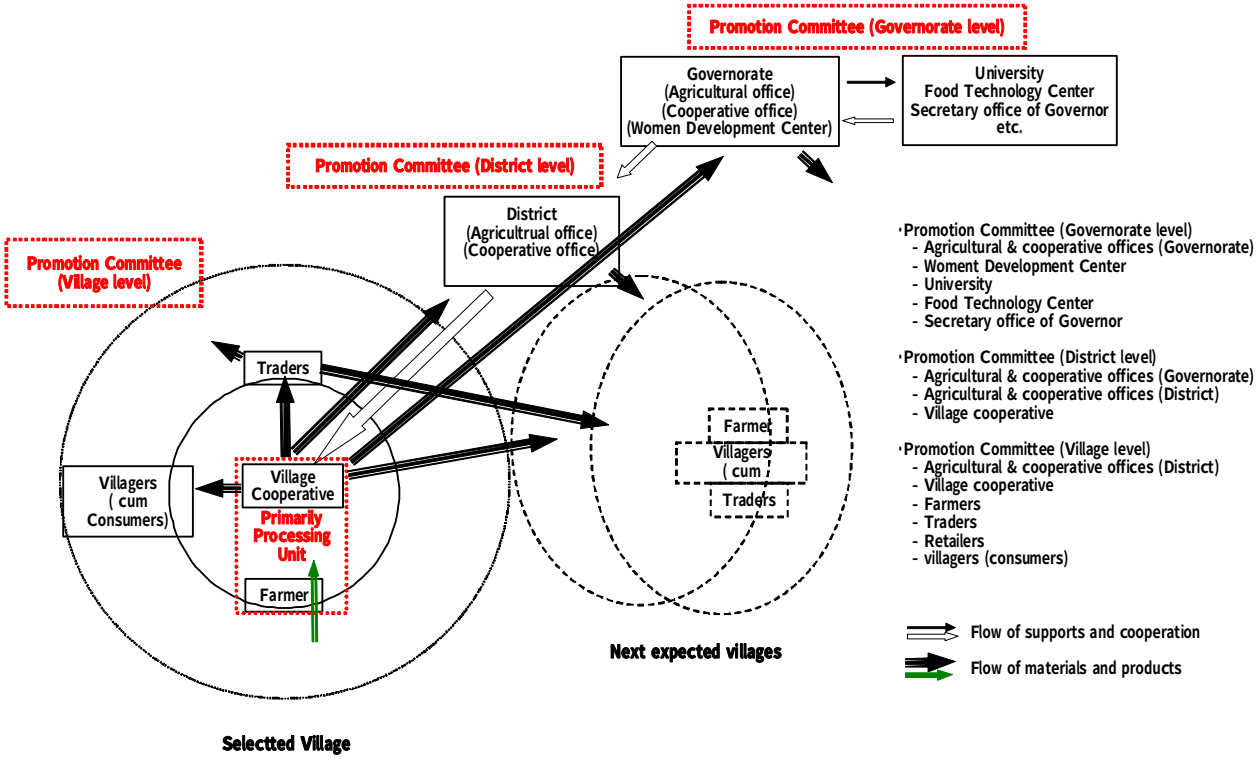
DCO: District Cooperative Office, WDC: Women Development Center, SOG: Secretary Office of Governor, GPC: proposed Governorate Promotion Committee, DPC: proposed District Promotion Committee, VPC: proposed Village Promotion Committee

6.7 Promoting Processing Products

Project (2-2)	Promoting Processing Products (Converting Useless Crops to Useful)

Objective:
Tomato and pomegranate, etc. are thrown away if they are damaged or their prices to sell are low. To use the damaged or thrown crops effectively, it is proposed to establish the simple processing facility to convert these to useful consumables.

Project Description:
1. The village cooperative manages and operates the unit.
2. The unit produces various agricultural products using the agricultural crops grown in the village.
3. Tomato paste making, pomegranate seed packing, etc. as well as combination of jam, juice, frozen vegetable making.
4. Farmers in the village participate with the unit operation and supply the low materials.
5. Traders and retailers in the village participate in selling the processed products.
6. District and governorate offices conduct technical and advisory supports.
7. Related agencies support the district and governorate offices.



Target Beneficiary	Village cooperatives, Small scale farmers
Target Crops	Tomato, Pomegranate, Orange, Mango, Fig, Carrot, Green pea, etc.
Expected Outputs	・ Establish the processing unit ・ Be conducted continuous operation by the village cooperative
Implementation Agencies	・ Village cooperative ・ Responsibly and supporting agency: Governorate and district offices

[2-2 Promoting Processing Products (Converting Useless Crops to Useful Ones)]

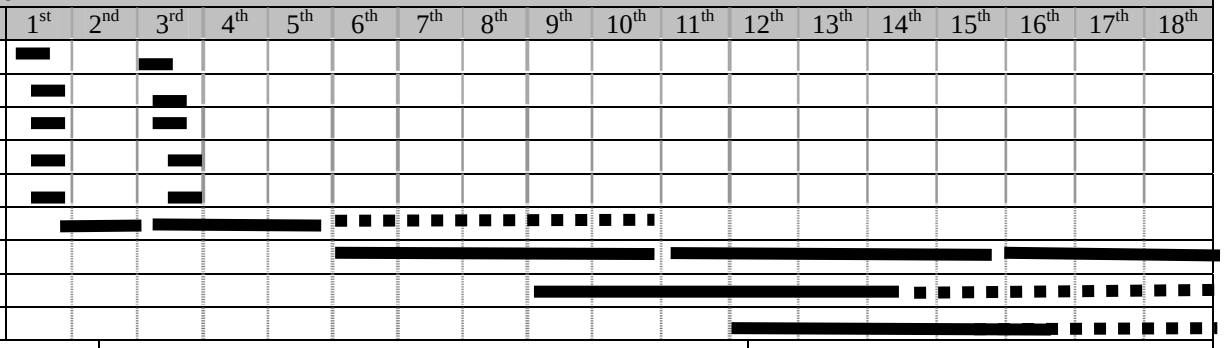
Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		・ Establish the unit in around 12 villages in 6 districts step by step. ・ Continuous operation	
Activities		Contents	Agencies
S-1	Assessment of present situation	・ To establish the promotion committee at the governorate level for promoting primary agricultural processing. ・ To find out various horticultural crops for the processing unit and examine which areas and which crops are mainly grown, making priorities.	GPC (GAD&GDAC, WDC, SOG, University)
S-2	Selection of place	・ To select the district and village to be promoted by means of opening the seminar, workshop, etc. ・ To establish the district and village promotion committees. ・ To select a convenient place and a proper size of room to repair for the unit and to procure the equipment for processing crops. It is preferable to select the place owned by the village cooperative for O&M.	DPC (GAD&GDAC, DAO&DCO,) VPC (VAC, Farmers, Villagers, Traders)
S-3	Designing of plan	・ To design the processing unit to process with one processing unit for effectively yearly usage, with holding the village level workshop. ・ To make a yearly operation and maintenance plan and procedure. ・ To estimate the cost-benefit ratio for the unit according to the plan. ・ To hold the village level workshop to confirm the design, crops and processing unit ・ To obtain the budget from the government's own budget, loan, investment by personnel, agency or aid, etc. for initial investment cost, working capital (for around 3 months) and contingency for minor change.	GPC, DPC, VPC
S-4	Setting up of operation organization	・ To set up an organization for managing, operating and maintaining the unit, with a technical and advisory support system by the related agencies. ・ To hold the village level workshop to confirm the organization, and cooperation & participation among the stakeholders. Especially, to confirm that the village cooperative operates with ownership, and small-scale farmers, traders and villagers actively participate with the activities.	DPC, VPC (supported by GPC)
S-5	Implementation of construction and procurement for the unit	・ To select the contractor and supplier for the unit. ・ To check and monitor the progress of the works by the contractor and supplier. ・ To confirm the completion for the unit	DPC VPC (supported by GPC)
S-6	Operation and maintenance (O&M)	・ To transfer the technologies to the village cooperative and expected workers of the unit about the processing and business management in cooperation with the related agencies, at the beginning of starting operation. ・ To conduct the operation and maintenance according to the plan ・ To conduct the monitoring & evaluation (M&E) by the district and governorate offices in cooperation with the related agencies.	VAC (supported by VPC, DPC & GPC)

(2-2 Promoting Processing Products (Converting Useless Crops to Useful))

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	・ To expand to other villages which have expected crops ・ To set-up the official standards of technically processing methods for hygiene and quality ・ To set-up the GIP (good industrial practices) and application system and introduce HACCP

Activities	
ML-1	To expand to the other villages according to the experiences during short term around 12 villages per 5 years
ML-2	To set-up the official standards of technical processing methods for hygiene and quality
ML-3	To set-up the GIP and application system and introduce HACCP

Timeframe



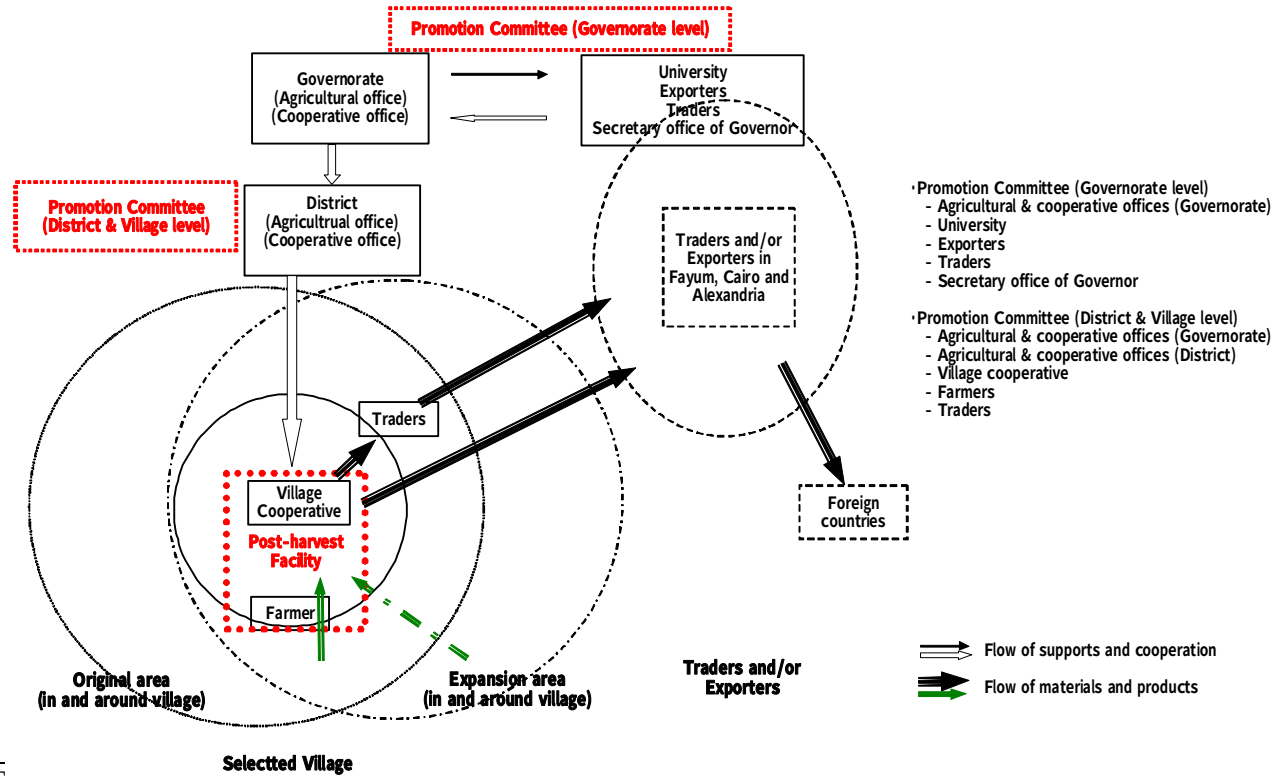
Inputs	Short Term	Mid & Long Term
	1. Workshop & Seminar (around 5 times) 2. Repairing room (around 40m^2 +add. store 10 m^2) 3. Procurement of equipment 4. Technical training (around 5 times) 5. Business training (1-2 times) 6. M&E (every 1-2 months x 5 years)	As the same as the short term per 5 years.
App. Cost	1. Workshop & Seminar 5 times: LE7,500 2. Construction(repairing room): LE35,000 3. Equipment: LE35,000 4. Initial running cost: LE9,000 5. Contingency (10%): LE7,000 6. Technical training 5 times: LE2,500 7. Business training 2 times: LE3,600 8. M&E: LE6,000 Sub-total per village: LE105,600 2 and 3 will be borne by the business entity (cooperative) Cost excluding 2 and 3: LE35,600 Total 12 villages: LE427,200	6-10 years: LE427,200 11-15 years: LE427,200 16-20 years: LE427,200 Total: LE1,281,600

6.8 Establishing Post-harvest Facilities

Project (2-3)	Establishing Post-harvest Facilities

Objective:
Medical and aromatic crops such as basil must be dried in order to sell. During the process, quality and quantity become low. Therefore, it is proposed to establish a processing facility such as a drying yard or drying facility to increase the quality and reduce the processing loss to obtain more income for farmers in and around the villages.

Project Description:
1. The village cooperative manages and operates the facility.
2. The facility produces dried and primarily processed products to sell to traders and/or exporters.
3. Farmers in the village participate to the facility operation and supply the materials.
4. Traders in the village and traders or exporters outside the villages participate in trading of the processed product.
5. Governorate and district offices in cooperation with the traders and exporters conduct technical and marketing support.
6. Related agencies support the district and governorate offices.



Target Crops	Mint, Marjoram, etc. in Minia; Basil, Mint, etc. in Assiut
Expected Outputs	・ Establish the facility ・ Conduct continuous operation by the village cooperative
Implementation Agencies	・ Village cooperative ・ Responsibly and supporting agency: Governorate and district offices

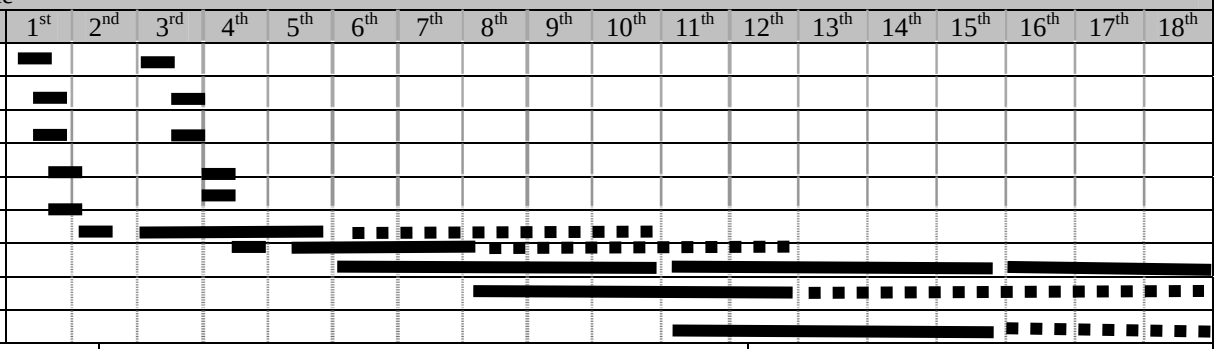
(2-3 Establishing Post-harvest Facilities)

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		・ Expand the facility in the Kadadeh village ・ Establish the facility in Minia for mint (or other) grown in village ・ Continuous operation	
Activities		Contents	Agencies
S-1	Assessment of present situation	・ To establish the promotion committee at the governorate level for promoting a post-harvest facility. ・ To locate crops, such as basil, mint, marjoram, and other medical and aromatic crops, and examine which areas and which crops are mainly grown, making priorities.	GPC (GAD&DGAC, Exporters, Traders, University)
S-2	Selection of place	・ To select the district and village to be promoted by means of opening a seminar, workshop, etc. ・ To establish the district and village promotion committee. ・ To select a convenient place and a proper size of processing room to construct the facility and to procure the equipment. It is preferable to select the place owned by the village cooperative or the government for O&M.	DVPC (GAD&GDAC, DAO&DCO, VAC, Farmers, Traders)
S-3	Designing of plan	・ To design the facility and equipment to process for effective usage of the facility for the crops, while holding a village level workshop. ・ To make a yearly operation and maintenance plan and procedure. ・ To estimate the cost-benefit ratio for the facility according to the plan and procedure. ・ To hold a village level workshop to confirm the design, crops and facility & equipment. ・ To obtain the budget from the government's own budget, and loans or investments by personnel, an agency, or aid, etc. for the initial investment cost, working capital (for around 3 months) with contingency for minor change.	GPC, DVPC
S-4	Setting up of operation organization	・ To set up an organization for managing, operating and maintaining the facility, with a technical and advisory support system of related agencies, such as district and governorate offices, exporters, traders, university, etc. ・ To hold the village level workshop to confirm the organization, and cooperation & participation among the stakeholders. Especially, to confirm that the village cooperative operates with ownership, and small-scale farmers, traders and exporters actively participate in the activities.	DVPC (supported by GPC)
S-5	Implementation of construction and procurement for the unit	・ To select the contractor and supplier for the facility and equipment. ・ To check and monitor the progress of the works by the contractor and supplier. ・ To confirm the completion for them.	DVPC (supported by GPC)
S-6	Operation and maintenance (O&M)	・ To transfer the technologies to the village cooperative and expected workers of the facility about the processing, and business management in cooperation with the related agencies, such as university, traders, or exporters, etc. at the beginning of starting operation. ・ To conduct the operation and maintenance according to the plan and procedure. ・ To conduct the monitoring & evaluation (M&E) by the district and governorate offices in cooperation with the related agencies.	VAC (supported by DVPC, GPC)

(2-3 Establishing Post-harvest Facilities)

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	・ To expand to other villages which have expected crops ・ To set-up the official standards of processing methods ・ To set-up the GIP and application system
Activities	
ML-1	To expand to the other villages around 2 facilities per 5 years, according to the experiences during short term.
ML-2	To set-up the official standards of processing methods.
ML-3	To set-up the GIP and application system.

Timeframe



Inputs	Short Term	Mid & Long Term
	・ Workshop & Seminar 5 times ・ Construction of facility (drying yard: 1 feddan = 4,200m^2) (building on the yard: 50 m^2) ・ Procurement of equipment (separator, grader, etc.) ・ Technical training 2 times ・ Business training 1-2 times ・ M&E every 1-2 months x 5 years	The same as the short term per 5 years.
App. Cost	・ Workshop & Seminar 5 times: LE7,500 ・ Construction of facility: LE500,000 ・ Procurement of Equipment: LE40,000 ・ Training 2 times: LE4,000 ・ Initial running cost: LE45,000 ・ Contingency: LE27,000 ・ M&E: LE6,000 Sub-total per village: LE630,100 Total 2 villages per five years: LE1,260,200	6-10 years: LE1,260,200 11-15 years: LE1,260,200 16-20 years: LE1,260,200 Total: LE3,780,600

6.9 Improving Agricultural Input Distribution System

<table>
<tr><td>Project (3-1)</td><td colspan="2">Improving Agricultural Input Distribution System</td></tr>
<tr><td colspan="3">Objective:
In promotion of horticultural crop production, use of certified seeds and seedlings shall be enhanced for quality and yield improvement of crops. A distribution system of fertilizer and agro-chemical shall be improved so that producers can use suitable materials at the right time.</td></tr>
<tr><td colspan="3">Project Description:
This project shall promote the use of advantageous varieties and certified seeds and seedlings in the production of vegetables, fruits and medical and aromatic plants. At first, advantages of certified seeds and seedlings of suitable cultivars shall be recognized by producers through demonstrations and intensive technical guidance, then a distribution system for them shall be established properly. At the same time, it is planned that the governorate agriculture directorate and district agriculture offices shall produce and provide quality seeds and seedlings for small-scale farmers. In mid- or long-term, quality and varieties of vegetable seedlings distributed by some individual producers shall be improved through proper supervision of the government.
In general, productivity, quality and profitability of horticultural crops differ widely with each producer's technical level in fertilizer and agro-chemical application method. In mid- and long-term, such farm inputs with appropriate quality shall be accessed by producers at reasonable prices as well as at right times through proper inspection by the government and support to the distribution system. In short-term, technical guidance shall be strengthened in the field of compost application using crop residue effectively in order to maintain or improve soil fertility. Some bio-fertilizers, which are developed by various agencies, are also examined for their effects and promoted to farmers gradually. As for plant protection, agricultural extension services shall be strengthened to improve farmers' skills in pest and disease control. Furthermore, the extension offices shall establish an effective system of forecasting of occurrence to minimize damages by pests and diseases in mid- and long-term projects.
The bio-control introduced by the study team and Central Laboratory of Organic Agriculture (the Lab) has been verified its effectiveness on pests, especially for Tuta absoluta and other rotting diseases. The farmers can protect crops from major diseases; the only problem is the costs of materials. By the production of materials in Assiut, the transport costs can be reduced and still ensure quality. The project aims at local production of major materials and expansion of the technology to farmers including advisory services. Other materials developed by the Lab are introduced to farmers. This project can coordinate with Bio-fertilizer Project for distribution and operation of demo farms.</td></tr>
<tr><td>Target Beneficiary</td><td colspan="2">Small-scale farmers (Seedling provision is only in Assiut)
Beneficiary of demo-farm is 400 farmers per year (20 farmers /demo-farm)
No. of Seedling recipient: 1,000 farmers per year</td></tr>
<tr><td>Target Crops</td><td colspan="2">Horticultural crops (mainly vegetables)</td></tr>
<tr><td colspan="3">Primary Target Area and Extension Plan</td></tr>
<tr><td colspan="2">Minia: Whole area
Demo-farm: total 40 feddan per annum.
(10 sites of 2 feddan for 2 seasons per annum)</td><td>Assiut: Whole area
Demo-farm: total 40 feddan per annum.
(10 sites of 2 feddan for 2 seasons per annum)
Vegetable seedling: for 1,000 feddan per annum.</td></tr>
<tr><td>Expected Outputs</td><td colspan="2">Technical trainings are provided to extension officers.
Technical guidance is given to farmers through demonstration farms.
Farm input supply system is supported to be improved (vegetable seedlings are provided by the government in Assiut).
Increase of distribution of bio-control materials
Increase of farmers or farms under bio-control management
Reduction of chemical fertilizers/pesticides</td></tr>
<tr><td>Implementation Agencies</td><td colspan="2">Governorate Agriculture Directorate (GAD), District Agriculture Office (DAO), Agricultural Research Institute (ARI), Agricultural Research Station in Governorate, University
Private sector for farm input supply
Central Laboratory of Organic Agriculture, Agricultural Extension Officers, Village Agricultural Cooperatives</td></tr>
</table>

(3-1 Improving Agricultural Input Distribution System)

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		Technical guidance to total 2,000 farmers at 100 demonstration farms Seedling supply for 4,000 feddan of vegetable field in Assiut (2nd to 5th Year)	
Activities		Contents	Agencies
S-1	Demonstration and guidance of certified seeds and seedlings		
S-11	Training for extension officers	Technical training on varieties of horticultural crops mainly for extension officers	GAD, DAO, RC, ARI, University
S-12	Establishment of demonstration farm	Establishment of demonstration farms for crop adaptability test and promotion	DAO, VAC
S-13	Operation of demonstration farm	Provision of necessary inputs for demonstration farm, and monitoring and evaluation	GAD, DAO
S-2	Production and distribution of seeds and seedlings by MALR local offices		
S-21	Setting-up of institutional framework	Setting up of institutional framework, assignment of necessary staffs, establishment of accounting system	GAD, DAO
S-22	Establishment of facilities	Land acquisition, construction of facilities (greenhouses, offices, etc.), procurement of materials	GAD, DAO
S-23	Production and distribution	Production and distribution of seeds and seedlings	GAD, DAO
S-3	Promotion of effective use of compost, farm yard manure and other organic materials		
S-31	Training for extension officers	Technical training on effective use of crop residue and compost making mainly for extension officers	GAD, DAO, RC, ARI, Univ., Private
S-32	Technical guidance to farmers	Technical guidance on compost making to farmers	DAO
S-33	Evaluation of introduced technique	Evaluation of results on implemented compost making method, and feedback	DAO
S-4	Strengthening of technical guidance on plant protection		
S-41	Training for extension officers	Technical training on inspection of pests and plant diseases and plant protection mainly for extension officers	GAD, DAO, RC, ARI, University
S-42	Inspection of pest and disease	Implementation of inspection of pest and disease regularly	DAO
S-43	Technical guidance to farmers	Technical guidance on plant protection to farmers	DAO
S-44	Evaluation of introduced technique	Evaluation of results on implemented plant protection method, and feedback	DAO
S-5	Introduction of Bio-control		
S-51	Preparation of laboratory	Rehabilitation of laboratory and equipment supply is implemented. One of the proposed sites is the Assiut branch of the Agricultural Research Center in the Abnoub District.	The Lab
S-52	Training of laboratory researchers	On-the-job training of production of *Bacillus thurigensis*, *Trichoderma*, anti-insect and others is conducted.	The Lab
S-53	Production	Bio-control materials are produced in order base.	The Lab
S-54	Selection of distributors	Key persons as official distributors are selected and evaluated from agricultural extension officers, representative of village agricultural cooperatives, private distributors and leading farmers (including retired agricultural officers)	GAD
S-55	Selection of demonstration farm	The demo farms are selected under extension strategies to function as farmers' schools at the village level and to collect information of affecting pests and available seedlings.	DAO
S-56	Training of stakeholders	Based on technical manual, the official distributors are trained.	Stakeholders
S-57	Advisory service to beneficial farmers	Growth of crops is inspected by the distributors. Field trips of demo farms are conducted. Monitoring results and harvested crops are presented in an Agricultural Show. Depending on farmers' requests, natural oriented minerals and plant growth accelerators are distributed.	Stakeholders

(3-1 Improving Agricultural Input Distribution System)

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	Technical guidance to total 5,200 farmers at 260 demonstration farms Seedling supply for 13,000 feddan of vegetable field in Assiut
Activities	
ML-1	Improvement of production and distribution system of certified seeds and seedlings
ML-2	Improvement of distribution system of fertilizer and agro-chemical
ML-3	Strengthening of forecasting of occurrence and guidance against pest and disease
ML-4	The Lab establishes Bio-Control Material Production Company and gene bank for strains of bacteria.
ML-5	The Lab produces parasitic insects for egg or larva of pests.
ML-6	Enlightenment of bio-control to farmers is conducted through TV program, radio or demo farms.
ML-7	The laboratory producing bio-control materials is strengthened in the production capacity.
ML-8	District Agricultural Offices promote bio-control management to farms in desert lands in order to increase of production of wheat, maize, bersium and other suitable crops.

Timeframe

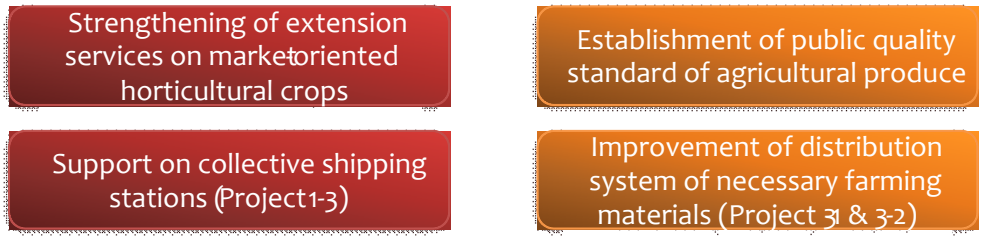
Inputs	Short Term	Mid & Long Term
	Experts for training & demonstration Training cost Operation cost for demo farms Facilities of seedling production (greenhouses, offices, etc.) O & M cost for seedling production	Experts for training & demonstration Training cost Operation cost for demo farms O & M cost for seedling production
Approx. Cost	LE 3,070,000 (LE 3,470,000 for demo + LE 800,000 for seedling in Assiut) Bio-control: LE3,400,000	LE 7,085,000 (LE 8,905,000 for demo + LE 1,300,000 for seedling in Assiut) Bio-control: LE6,000,000 – LE9,000,000

6.10 Improving Quality of Agricultural Produce

Project (3-2)	Improving Quality of Agricultural Produce

Objective:
Techniques for quality improvement of horticultural crops shall be introduced and expanded through a proper agricultural extension system, aiming at higher value-added products.

Project Description:
This project aims at quality improvement of horticultural crops, as trading conditions of them are strongly dependent on their quality. At first, agricultural extension services shall be strengthened in the field of quality improvement techniques through intensive training for extension officers and demonstration to farmers. In mid- and long-term, a distribution system of necessary materials shall be improved with certain support by the government. On the other hand, producers shall implement grading and sorting of their products to meet market demand, and the government shall support them for the establishment of collective shipping facilities. In long-term, it is recommended that the government shall establish a quality standard of agricultural products to stabilize trading conditions between producers and traders.



Target Beneficiary	Small-scale farmers
Target Crops	Horticultural crops (fruits and vegetables)
Primary Target Area and Extension Plan	
Minia: Whole area Demo-farm: total 40 feddan per annum. (10 sites of 2 feddan for 2 seasons per annum)	Assiut: Whole area Demo-farm: total 40 feddan per annum. (10 sites of 2 feddan for 2 seasons per annum)
Expected Outputs	Technical trainings are provided to extension officers. Technical guidance is given to farmers through demonstration farms.
Implementation Agencies	Governorate Agriculture Office (GAO), District Agriculture Office (DAO), Village Cooperative, Agricultural Research Institute (ARI), Agricultural Research Station in Governorate, University, Private sector for farm input supply

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		Technical guidance to total 2,000 farmers at 100 demonstration farms	
Activities		Contents	Agencies
S-1	Strengthening of extension service on quality improvement		
S-11	Training for extension officers	Technical training on technologies for quality improvement, such as verity, crop management and post-harvest handling, mainly for extension officers	GAD, DAO, RC, ARI, University
S-12	Establishment of demonstration farm	Establishment of demonstration farms for quality improvement of horticultural crops	DAO
S-13	Operation of demonstration farm	Provision of necessary inputs for demonstration farm, and monitoring and evaluation	DAO
S-2	Support on collective shipping stations (refer to Project 1-3)		

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	Technical guidance to total 5,200 farmers at 260 demonstration farms
Activities	
ML-1	Establishment of public quality standard of agricultural product
ML-2	Improvement of distribution system of necessary farming materials (Project 3-1)

(3-2 Improving Quality of Agricultural Produce)

Timeframe																		
Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-11																		
S-12																		
S-13																		
S-2																		
ML-1																		
ML-2																		

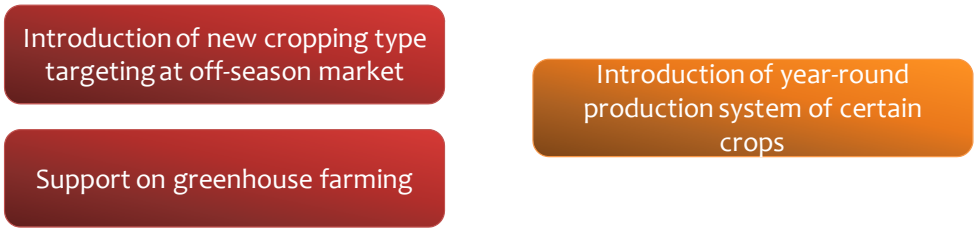
Inputs	Short Term	Mid & Long Term
	Experts for training & demonstration Training cost Operation cost for demo farms	Experts for training & demonstration Training cost Operation cost for demo farms
Approx. Cost	LE 3,470,000	LE 8,905,000

6.11 Adjusting Cropping Pattern

Project (3-3)	Adjusting Cropping Pattern

Objective:
As seasonal price fluctuation of vegetables and fruits is significant, off-season cropping types shall be introduced to meet high price.

Project Description:
This project promotes various cropping types for off-season shipping, because prices of horticultural crops fluctuate significantly by years and by seasons. For this purpose, it is proposed that technical guidance of new cropping types, for example intercropping of horticultural crops with heat-protection crops, shall be provided to farmers through demonstration farms. Greenhouse and tunnel farming systems are also recommended to be promoted with certain technical and financial assistance. In mid- and long-term, a year-round production system of certain crops shall be established to stabilize their prices.



Target Beneficiary	Small-scale farmers
Target Crops	Horticultural crops (mainly vegetables)
Primary Target Area and Extension Plan	
Minia: Whole area Demo-farm: total 40 feddan per annum. (10 sites of 2 feddan for 2 seasons per annum)	Assiut: Whole area Demo-farm: total 40 feddan per annum. (10 sites of 2 feddan for 2 seasons per annum)
Expected Outputs	Technical trainings are provided to extension officers. Technical guidance is given to farmers through demonstration farms.
Implementation Agencies	Governorate Agriculture Office (GAO), District Agriculture Office (DAO), Village Cooperative, Agricultural Research Institute (ARI), Agricultural Research Station in Governorate, University, Private sector for farm input supply

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]

Target		Technical guidance to total 2,000 farmers at 100 demonstration farms	
Activities		Contents	Agencies
S-1	Introduction of new cropping type targeting at off-season market		
S-11	Training for extension officers	Technical training on technologies for quality improvement, such as verity, crop management and post-harvest handling, mainly for extension officers	GAD, DAO, RC, ARI, University
S-12	Establishment of demonstration farm	Establishment of demonstration farms for off-season cropping of horticultural crops	DAO
S-13	Operation of demonstration farm	Provision of necessary inputs for demonstration farm, and monitoring and evaluation	DAO
S-2	Support on greenhouse farming		
S-21	Training for extension officers	Technical training on greenhouse farming method mainly for extension officers	GAD, DAO, RC, ARI, University
S-22	Establishment of demonstration farm	Establishment of demonstration farms for greenhouse farming methods	DAO
S-23	Operation of demonstration farm	Provision of necessary inputs for demonstration farm, and monitoring and evaluation	DAO

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]

Target	Technical guidance to total 5,200 farmers at 260 demonstration farms Introduction of year-round production system of certain crops
Activities	
ML-1	Training for extension officers and Technical guidance to farmers

(3-3 Adjusting Cropping Pattern)

Timeframe																		
Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-11																		
S-12																		
S-13																		
S-21																		
S-22																		
S-23																		
ML-1																		

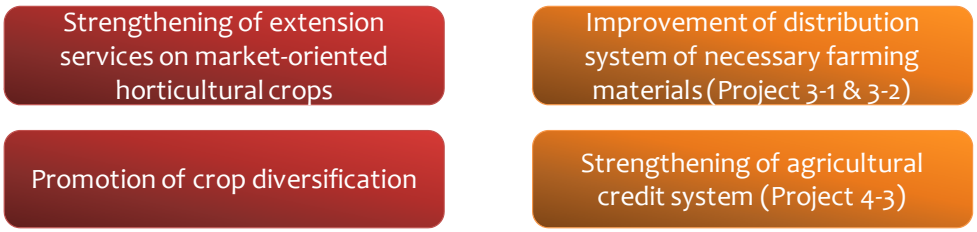
Inputs	Short Term	Mid & Long Term
	Experts for training & demonstration Training cost Operation cost for demo farms	Experts for training & demonstration Training cost Operation cost for demo farms
Approx. Cost	LE 3,470,000	LE 8,905,000

6.12 Promoting Horticultural Crop Production

Project (3-4)	Promoting Horticultural Crop Production

Objective:
Agricultural extension services on cash crops or horticultural crops shall be strengthened for the sake of increase of production amount, increase of number of producers, and diversification of crops.

Project Description:
This project is to establish strong agricultural extension services of horticultural crops based on market information, as profitability of them greatly depends on demand and market circumstance. For this purpose, the extension service agency shall promote production of high-demand crops, and guide crop diversification to reduce marketing risk. In mid- and long-term, producers' selection range of agricultural inputs shall be expanded through proper arrangement of their distribution system. In addition, the agricultural credit system shall be strengthened to improve access from producers of horticultural crops.



Target Beneficiary	Non-commercialized farmers producing traditional crops only. The number of direct beneficiaries is 20 farmers in each demonstration site. The number of demonstration sites is 20 sites (1 site in each district) in a season (2 seasons in a year). Therefore, total number of direct beneficiaries is 800 farmers in a year (20 * 20 * 2).
Target Crops	Main target crops are horticultural crops (vegetables) and other cash crops.

Primary Target Area and Extension Plan	
Minia: Whole area (mainly old land) Demo-farm: total 40 feddan per annum. (10 sites of 2 feddan for 2 seasons per annum)	Assiut: Whole area (mainly old land) Demo-farm: total 40 feddan per annum. (10 sites of 2 feddan for 2 seasons per annum)

Expected Outputs	Technical trainings are provided to extension officers. Technical guidance is given to farmers through demonstration farms.
Implementation Agencies	Governorate Agriculture Office (GAO), District Agriculture Office (DAO), Village Cooperative, Agricultural Research Institute (ARI), Agricultural Research Station in Governorate, University, Private sector for farm input supply

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]

Target		Technical guidance to total 2,000 farmers at 100 demonstration farms	
Activities		Contents	Agencies
S-1	Strengthening of extension services on horticultural crops based on market information		
S-11	Training for extension officers	Training on horticultural crop production method and market information mainly for extension officers	GAD, DAO, RC, ARI, University
S-12	Establishment of demonstration farm	Establishment of demonstration farms for horticultural crop production methods	DAO
S-13	Operation of demonstration farm	Provision of necessary inputs for demonstration farm, and monitoring and evaluation	DAO
S-2	Promotion of crop diversification		
S-21	Training for extension officers	Technical training on horticultural crop production method and cropping pattern mainly for extension officers	GAD, DAO, RC, ARI, University
S-22	Establishment of demonstration farm	Establishment of demonstration farms for horticultural crop production method and cropping pattern	DAO
S-23	Operation of demonstration farm	Provision of necessary inputs for demonstration farm, and monitoring and evaluation	DAO

(3-4 Promoting Horticultural Crop Production)

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	Technical guidance to total 5,200 farmers at 260 demonstration farms
Activities	
ML-1	Improvement of distribution system of necessary farming materials
ML-2	Strengthening of agricultural credit system

Timeframe																		
Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-11																		
S-12																		
S-13																		
S-21																		
S-22																		
S-23																		
ML-1																		
ML-2																		

Inputs	Short Term	Mid & Long Term
	Experts for training & demonstration Training cost Operation cost for demo farms	Experts for training & demonstration Training cost Operation cost for demo farms
Approx. Cost	LE 3,470,000	LE 8,905,000

6.13 Supporting Capacity Development of Farmers' Organization

Project (4-1)	Supporting Capacity Development of Farmers' Organization

Objective:
To sell produce at a good price, it is preferable to support the activities of the cooperative and farmers' group to implement the project

Project Description:
Village agricultural cooperatives will be the entrance to small scale farmers in the villages as the support from the Government administration. Therefore, developing the capacity of an agricultural cooperative is primarily targeted. For the proposed Projects under this Master Plan, there will be occasions to form a group of farmers such as for demonstration activities, operation of processing facilities, etc. The proposed Projects would assist forming a group of farmers at the beginning as an informal group to practice the proposed activities. It is expected that some of successful farmer groups would develop with their initiative to be a formal one with clear objective with the prospect of improving their livelihood. The policy for strengthening a group of farmers to be a registered association is to provide opportunities for farmers to develop their initiative.

Target Beneficiary	All village cooperatives and small scale farmers in Minia and Assuit Governorate
Target Crops	-
Expected Outputs	1) Expanding sales/marketing channel 2) Establishing and promoting post-harvesting facilities 3) Fair distribution of fertilizers 4) Producing high qualified agricultural commodities
Implementation Agencies	ASFUS,GAD, DAO, DAC, VAC, SC, ARI, RC, University

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]

Target			
Activities		Contents	Agencies
Short	**Supporting Sales/Marketing Activities of the Farmers' Organization**		
S-1	Establishing market information system	Technical guidance for collection and dissemination of information	DAC, VAC
S-2	Support for expanding market channels	-Guidance and training for cooperative to engage in collection and shipping the agricultural produce -Seminar with private companies -Study tour for successful institutions	DAO, DAC,VAC,SC
S-3	Facilitating collection place in village	Guidance and instruct cooperative to facilitate the place for collection of produce and operation of the place	GAO,DAC, DAO,
S-4	Facilitating community market		
Supporting Post Harvest –Establishing, Processing, Managing, Monitoring & Evaluation			
S-5	Promoting primary agricultural processing	-Instruct cooperative to identify their role (providing the place for processing, managing the facility with farmer group -Technical training for operating the facility -Monitoring & evaluation	DAO,DAC,VAC, Farmer group
S-6	Establishing post-harvest facility		DAO,DAC,VAC, Farmer group
S-7	Promoting converting useless crops to useful		DAO,DAC,VAC, Farmer group
Supporting Inputs/Production-Seed, Fertilizer, Quality, Cropping Pattern, Horticulture			
S-8	Seed and seedling production and distribution system improvement	Technical trainings to extension officers including ones posted to cooperatives	GAD, DAO, VAC, RC, University, farmers' group
S-9	Fertilizer and agro-chemical distribution system improvement		GAD,DAO,VAC,RC, University
S-10	Quality improvement		GAD,DAO,VAC,RC, University
S-11	Cropping pattern adjustment		GAD,DAO,VAC,RC, University
S-12	Horticulture crop production promotion		GAD,DAO,VAC,RC, University

(4-1 Supporting Capacity Development of Farmers' Organization)

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	
Activities	
ML-1	The agricultural cooperative is desirable to develop as a comprehensive cooperative covering guidance of farm management and credit business. The contents of cooperative business are composed of the following: - Procurement of Input Materials- To supply qualified input materials to farmers with low prices steadily through the mass purchase in accordance with the program. - Managing Post-Harvest Facilities-To utilize storages and drying facilities collectively - Marketing- To secure steady and high income for farmers by selling agricultural produces with favorable prices according to planned production and shipment - Guidance of Farm Management To guide farmers in how to apply agricultural technologies and to manage agricultural business To prepare a regional agricultural plan and to train immediate successors to farmers To sustain agricultural development taking into consideration environmental preservation - Credit Business To receive selling costs of agricultural commodities To pay for purchasing input materials Window for using agricultural fund

Timeframe

Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-1																		
S-2																		
S-3																		
S-4																		
S-5																		
S-6																		
S-7																		
S-8																		
S-9																		
S-10																		
S-11																		
S-12																		
ML-1																		

Inputs	Short Term	Mid & Long Term
	1) Trainer and training materials	1) Trainer and training materials
App. Cost	Included in above projects	Included in above projects

ASFUS: Agriculture Services Follow-up Sector, RC: Research Center

6.14 Strengthening Agricultural Extension Services

Project (4-2)	Strengthening Agricultural Extension Services

Objective:
To develop an improved model of an agricultural extension system that efficiently responds to the needs of farmers and the market and consequently expands the improved model so that livelihood of farmers nationwide would improve.

Project Description:
To carry out extension services responding to farmers' and consumers' needs, location specific adoption technologies and extension services based on site-diagnosis are required to be developed in parallel with capacity building of agricultural personnel. District and village agricultural extension personnel should have sufficient capability to provide extension services delivery as generalists and need to consult extension specialists in the governorate in case problems could not be solved on the sites or to get information through accessing internet systems.
To provide extension services responding to farmers' needs, diagnosis based extension services are required. This project consists of establishing on site-diagnosis, major crop yield evaluation, strengthening of farm business advisory services, improving decision-making skills and technical capacity of farmers as basic components.
Extension services by the existing staffs are limited in mobilization of extension specialists and generalists under the current organization. In order to complement this mobilization, it is necessary to utilize local resources. This project aims to strengthen the farmer-to-farmer extension mechanism through training of advanced farmers who are willing to cooperate.

Target Beneficiary	All small scale farmers in the Minia and Assuite Governorates
Target Crops	-
Expected Outputs	1) Capacity building for all district extension officers will be carried out. 2) Existing equipment at Governorate and district level will be upgraded 3) All extension centers will be able to implement on-site-diagnosis extension services. 4) All village extension workers will be able to carry out on-site-diagnosis. 5) All districts will be able to implement farmer-to-farmer extension mechanism.
Implementation Agencies	CAAE, GAD, MDSCC, DAO, DEC, VAC, ARC, ARDF

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]

Target			
Activities		Contents	Agencies
Short	**Capacity Building of District Extension Officers as Specialists**		
S-1	Training of Trainers (TOT)	Technology updates, refresher courses	MMSC,ARC
S-2	Training on participatory planning	Introduction of guidelines and examples of project formulation, proposal development, implementation	GAD,DAO,ARDF
S-3	Cross visits among governorate and districts	Holding a field school at demo farms and succeeded farms	GAD, DEC
	Upgrading of Existing Laboratories and Equipment at Governorate Level		
S-4	Reviews of types and functionality of existing equipment	Soil analysis equipment, moisture and PH meter	GAD,
S-5	Preparation of inventory list of necessary equipment	List of equipment for on-site-diagnosis	GAD
S-6	Installation of necessary equipment	Guidance for installation of equipment	GAD
S-7	Training on the use of equipment	Preparation of manuals for each equipment	GAD,
	Provision of Diagnosis based-Extension Services		
S-8	Training to extension officers in Governorate and district level	Lecture of on-site-diagnosis and practical trainings	GAD
S-9	Verification of trials in selected districts	Trying on-site-diagnosis and verifying	GAD

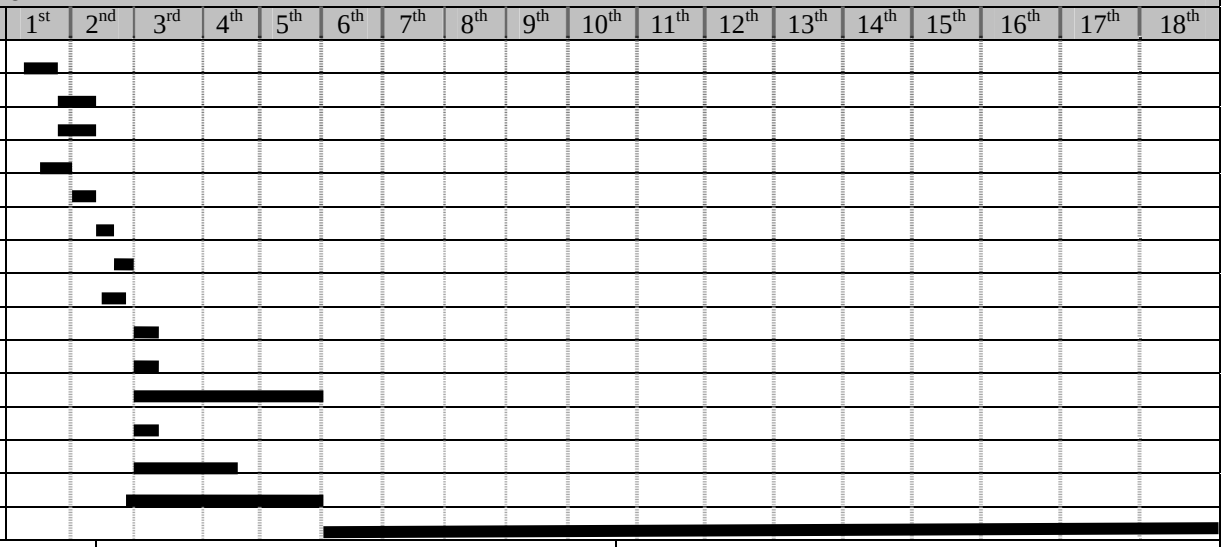
(4-2 Strengthening Agricultural Extension Services)

	Improvement of Decision-Making Skills and Technical Capacity Building		
S-10	Provision of diagnosis-based extension services	Lecture on diagnosis responding to farmer's needs	DEC, VC
S-11	Provision of business advisory services	Training on farm management being tailored to market situations	DEC, VC
	Strengthening of Farmer-to-Farmer Extension Mechanism		
S-12	Selection of pilot districts and leading farmers who are willing to cooperate	Study on possibility of this extension mechanism	GAD,DEC, VC
S-13	Training of leading farmers	Mastering diagnosis on soil and damages by blight and insects	GAD,DEC,VC
S-14	Establishment of demo-farm and provision of training/advisory services by farmers	Technologies on cropping systems and market situations	GAD,DEC, VC

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]

Target	
Activities	
ML-1	Based on the achievement and lessons learned from the project in a short-term period, trained extension personnel become major actors who carry out appropriate extension services for farmers in cooperation with the relevant agencies in mid-long term development. Moreover, strengthening a farmer-to-farmer extension mechanism will be continued in this term through training of advanced farmers who are willing to cooperate.

Timeframe



Inputs	Short Term	Mid & Long Term
	1) Trainer and training materials 2) Laboratory equipment for on-site-diagnosis extension service 3) PC and internet equipment 4) Copying machine 5) Vehicle	1) Trainer and training materials 2) Equipment for on-site-diagnosis extension service 3) PC and internet equipment 4) Copying machine 5) Vehicle
App. Cost	1,815,000 LE	9,840,000 L.E

MDSCC: Mallawe Development Support Communication Center, DEC: District Extension Center, ARC: Agriculture Research Center, ARDF: Agriculture Research Development Fund

6.15 Improving Agricultural Finance Accessibility

Project (4-3)	Improving Agricultural Finance Accessibility
Objective: To improve accessibility of agricultural financial services for small scale farmers to promote agricultural produce marketing	
Project Description: This project is to promote existing agricultural financial services and facilitate farmers to access these financial services. Farmers' knowledge and financial literacy of existing loan programs and services will be strengthened. In particular, capacity of small scale farmers and farmers' group will be strengthened to identify suitable financial services for their activities. Projects being planned to implement in this field such as Rural Income and Economic Enhancement Project (RIEEP) and Promotion of Rural Incomes through Market Enhancement Project (PRIME) are also promoted to collaborate and encourage farmers with proper knowledge and planning to access financial services provided for these projects.	
Target Beneficiary	Small scale farmers, village cooperatives, and farmers group in target governorate
Target Crops	Horticulture crops, fruits, and others
Expected Output	Agricultural financial resources are utilized by small scale farmers and farmers group to facilitate commercialized crops and agricultural processing.
Implementation Agencies	Central Directorate and Governorate Agricultural Office, SFD, PBDAC, Financial Agencies, and other related projects

Target and Major Activities [Short Term:1st to 5th Years (2013-2017)]			
Target		Existing agricultural resources are shared by all village cooperatives (342 village cooperatives in Minia and 250 village cooperatives in Assiut) Seminars will be held in all districts (9 districts in Minia and 11 districts in Assiut) to enhance agricultural finance literacy. Also, the seminar will be held in half of the village cooperatives in the target area (170 village cooperatives in Minia and 120 village cooperatives in Assiut)	
Activities		Contents	Agencies
S-1	Collect information about existing financial resources	Collecting information about existing financial resources which farmers will be able to apply for. Financial institutions, fund for agricultural activities, and loan programs will be identified.	MALR, GAD
S-2	Establishment of information dissemination system	Available financial services are shared with farmers through agricultural cooperatives. Integrated in the Project "Establishing Market Information System" will be considered.	DAO, VAC
S-3	Hold seminars about financial services	Holding seminars which farmers can learn application process, business planning, and other related skills to use financial services.	GAD DAO, SFD
S-4	Training for staff in financial institutions	Conduct training about project and business evaluation, enhancing agricultural knowledge, and financial education.	SFD 、 PBDAC, Financial Institutions
S-5	Collaborate with other donors and loan programs	Collaborate with the projects such as RIEEP and PRIME and promote agricultural cooperatives' business activities.	GAD, Project Office
S-6	Monitoring and evaluation	Monitoring and evaluation about accessibility of financial resources for farmers, agricultural cooperatives, and farmers' group.	DAO, VAC

Target and Major Activities [Mid & Long Term: 6th to 18th Year (2018 -2030)]	
Target	Establish agricultural financial services provided by agricultural cooperatives and farmers' organizations. 5 agricultural cooperatives from each district, 100 cooperatives in total (55 agricultural cooperatives in Minia and 45 agricultural cooperatives in Assiut) are in agricultural financial services such as microfinance.
Activities	
ML-1	Through the activities in a short term period, diversity of financial services will be promoted as well as support financial services of agricultural cooperatives and farmers' groups.

(4-3 Improving Agricultural Finance Accessibility)

Timeframe																		
Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th
S-1																		
S-2																		
S-3																		
S-4																		
S-5																		
S-6																		
ML-1																		

Input	Short Term	Mid & Long Term
	1) Seminars 2) Trainings and Study Tour 3) Materials for trainings and information dissemination 4) Monitoring, evaluation, and advisers	1) Cost for expansion of activities in short term period 2) Cost for activities of agricultural cooperatives and farmers organizations (training fees and materials, office equipment, and advertisement)
App. Cost	1) Seminars District: LE40,000 Village: LE72,000 2) Trainings and Study Tour Training: LE7,500 Study Tour: LE36,000 3) Materials for trainings and information dissemination Training materials: LE120,000 Brochure LE150×592 cooperatives: LE88,800 4) Monitoring, evaluation and advisers LE288,000 Total: LE652,300	1) Seminars at village level LE72,000 × 2 （rest of agricultural cooperatives） LE144,000 2) Support for activities of Agricultural Cooperatives Training cost: LE750,000 Materials LE4,500×100 cooperatives LE450,000 Equipment LE1,000×100 cooperatives LE100,000 Advertisement LE1,500×100 LE150,000 Total: 1,594,000

CHAPTER 7 CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This Project has formulated a Master Plan for Rural Development for small scale farmers in the Project Area from the viewpoint of improving marketing of agricultural produce. In the course of the Project, the Pilot Projects were implemented for a period of 14 months and the lessons learned from the practices have been reflected into the Master Plan, which consists of the points to consider for implementing the plan. This Master Plan is positioned as one to contribute to achieving the strategic goals of the Ministry's "Sustainable Agriculture Development Strategy 2030", namely "Increasing the competitiveness of agricultural products in local and international markets", and "Improving the living standards of the rural inhabitants, and reducing poverty rates in the rural areas".

This Master Plan is putting the promotion of value added agriculture by strengthening agricultural extension services and also agricultural marketing and agro-processing business through activating village agricultural cooperatives into priority projects and their implementation will activate the rural economy. It is concluded that this Master Plan can contribute to promoting the Agriculture Development Strategy of the Ministry in Minia and Assiut Governorates in order to develop the agriculture sector and reduce poverty in the rural area.

7.2 Recommendations

1) In the Project Governorates, the counterparts have taken initiative to continuously support the Pilot Project sites. As of May 2012 in the Assiut Governorate, the counterparts have been preparing for establishing the committee, as proposed in this Master Plan, to support the full operation of the basil drying yard in this crop season. The Committee would be formed with the Governorate Agriculture Directorate, the District Agriculture Office, and the Village Agricultural cooperative. The Ministry should take action such as budget allocation in order to smoothly implement the development plans formulated by this Master Plan.

2) The Ministry has resumed recruiting the new qualified staff since 2012 after a lengthy attrition. In this year, around 70 college graduates, out of whom 20% are women, and 53 college graduates have been hired in the Minia and Assiut Agriculture Directorates respectively. These young officers have keenly interested in their career as they were actively making their comments during the seminars of this Project. These young officers should be assigned to implement the Master Plan and trained from the senior officers through the implementation.

3) The Central Administration for Foreign Agricultural Relation in the Ministry has initiated the liaison conference in order to coordinate with the donors who are involved in agricultural development in Egypt. This Master Plan should be introduced to them through this kind of conference so that the Master Plan could be effectively utilized for the rural development in Upper Egypt.

4) This Master Plan was formulated based on the practice of the Pilot Projects but could be applicable in other Governorates. In the course of implementing the Master Plan, the practice based on the Master Plan should be taken into consideration if introduced and extended to other Governorates.

5) As mentioned above, this Master Plan has been formulated from the viewpoint of improving marketing of agricultural produce. However, there is a need of comprehensive measures including other development points of view to achieve the poverty reduction in rural Upper

Egypt. The following are the proposed further studies and practices, which are highly related to the objectives of this Master Plan:

- Livestock improvement: although it was out of the scope of this Master Plan Study, it has been recognized that the animals are one of the important income sources for small scale farmers and landless farmers. Also small animals like poultry raised inside the house is a source of income for women in the village. There is a need of developing apiculture in the Assiut Governorate as well.

- Income Generation/Livelihood Improvement: it seems the population of non-agricultural employment as well as landless farmers has been increasing in the rural area of Egypt with the average village population size reaching as much as 10,000 as the population growth continues. It is important to elucidate the actual status of non-agricultural employment as well as small scale farmers and landless agricultural employees in the village in order to promote the inclusive development. An example of the village surveyed by this Project reveals that the landless farmers occupy half of the village population and those who won more than 1feddan counts a few percent. It is therefore required to consider the model of livelihood with farming only, farming and off-farm work and off-farm work only. As in the Pilot Projects, a roof cultivation system with pots was tried for the landless and for women. Assisting villagers with income generating activities or improving living conditions, including the development of off-farm work or vocational and basic education provided through village workshops (as described in this Project), should be taken into consideration.

- Land reclamation to mitigate the tight land resource: In old land the transfer of farmland into other use has progressed due to population growth, resulting in the decrease of farmland. In addition to the tight land resource, amendment of land tax law has driven the landowners to raise the rent and the income of the peasants has been suppressed. The absolute shortage of land hinders the transfer of subsistent small scale farmers into commercial farmers on the old land. The land reclamation, which has already been implemented ever since by the Government, should still be further promoted and the institutional consideration to allocate the land to small scale farmers should be required.

- Irrigation development as a stable agricultural production: There have been many voices in the villages about water shortage especially in the ones located at the lower edge of the irrigation canals during the study of this Project. Continuous endeavor for irrigation development is required, i.e. extending the efficient on-farm irrigation technology promoted by the Ministry of Agriculture and Land Reclamation and the improvement of irrigation facilities by the Ministry of Water Resources and Irrigation.