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**Egypt**

# **Sustainable Agricultural Development Strategy**

**Towards 2030**

**Adel M. Abul-Naga**

*Senior advisor, Agriculture Research & Development Council (ARDC)  
Arab Republic of Egypt*

# Egypt: Sustainable Agricultural Development Strategy towards 2030

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## Introduction: background

Three Agriculture strategies have been prepared for Arab Republic of Egypt since the 1980s, namely the 1980s Agricultural Development Strategy, the 1990s Agricultural Development Strategy, and the Agricultural Development Strategy towards 2017.

The three strategies differed in their objectives and programs based on prevailing international and national circumstances. The 1980s Agricultural Development Strategy dealt mainly with the liberalization of the agricultural sector, pricing policies and increasing the annual growth rate of agricultural production to 3.4%. The 1990s Agricultural Development Strategy concentrated on completing the economic reform program in the agricultural sector, increasing the value of agricultural exports to EGP 5 billions, and achieving an annual agricultural growth rate to 3%. The Agricultural Development Strategy towards 2017 concentrated on achieving self-sufficiency in cereals, targeting an annual agricultural growth rate of 4.1%, and continuing the land reclamation program of 150 000 feddans<sup>1</sup> annually.

Regarding policy and price reforms, the 1980s Strategy primary focus was to adjust the pricing policies and mechanisms as a means to reallocate resources and provide incentives to the farmers to increase agricultural productivity. The 1990s Agricultural Development Strategy focused on total liberalization of cotton production, marketing and export, promoting agricultural research, reviewing the policies and standards used in selecting the beneficiaries for distributing newly reclaimed lands. The 2017 Strategy addressed the following: i) decentralization of water management, ii) established a mechanism to recover part of the cost of irrigation services, iii) addressing the problem of village based urban sprawl and encroachment on the agricultural lands, and iv) increasing self-sufficiency in strategic crops.

The 1980s Strategy was the starting point to concentrate on formulating institutional and human resource development and water management aspects. To provide the basis needed to achieve the envisaged growth rates for the agricultural sector, the strategy concentrated on developing the agricultural extension services, research and credit systems. To provide continuity in strategies formulation and objectives, the 1990s Strategy focused on fostering complementarities between research and extension services. This was based on reducing staff in the Ministry of Agriculture and Land Reclamation (MALR), and rationalizing activities by the Principal Bank for Agricultural Development and Credit (PBDAC) in procurement and distribution of agricultural inputs.

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<sup>1</sup> The Feddan is a unit of area used in Egypt, Sudan and Syria. 1 feddan = 4 200 square meters (m<sup>2</sup>) = 1 038 acres.

Regarding achievements gained, several objectives of the three aforementioned strategies have been realized, while others lagged. Since launching the 2017 Strategy in 2003, the national economic situation in Egypt has experienced challenges some of which were due to international and regional changes, while others were the result of local interactions. In the meantime, several other international developments have taken place, including the global food crisis which led to the convening of the “*High-Level Conference on World Food Security: the Challenges of Climate Change and Bio-energy*” held in Rome, June 2008, the launching by the World Bank (WB) of both the “*World Development Report 2008: Agriculture for Development*”, and the “*International Assessment of Agricultural Knowledge, Science and Technology for Development*” issued in 2008, as well as the “*Intergovernmental Panel on Climate Change*”.

## **1 New trends and challenges**

The most important factors behind the decision to prepare a new Strategy for the Sustainable Agricultural Development (SADS) towards 2030 are:

- All previous agricultural development strategies have stressed the importance of maximizing returns on water use, efforts exerted so far in this field were not enough to direct farmers towards applying water-saving measures and improved cropping patterns;
- The role of market force in determining the rental value of agriculture land, instead of tax assessment to be elaborated;
- Accelerated scientific developments to wide application of Information Technology (IT) remote sensing technology, application of genetic engineering and nanotechnology in agricultural development;
- Exposure to external crises which negatively affect the agricultural productive capacity, as well as the farmers income;
- The weaknesses of small farmers’ associations, as well as the weak agricultural marketing structure have reduced the potential to strengthen synergies between national economy and production policies;
- The ongoing EU-Egyptian Association dialogue, the Arab Free-Trade Area, Common Market of Eastern and Southern Africa (COMESA), and other regional trade agreements, necessitated a redefinition of objectives and modalities affecting agricultural development;
- Food prices on the international markets experienced a sharp and unexpected rise in both the demand and supply of food products, “the world food crisis”;
- A global trend towards the use of food crops in the production of biofuel, in USA and EU, has wide implications on the food supply to the world market;
- Global climate changes due to the greenhouse effect and its probable adverse effects on the lands of the Delta and the northern lakes of Egypt;
- The emergence of a new trend towards agricultural investments beyond the national borders of many countries.

It is worth mentioning that the SADS document towards 2030 is not concerned only with the revision of development programs and their objectives, but also gave special attention to the challenges facing agricultural development efforts, as well as execution modalities. Its vision focuses primarily on improving livelihood of the rural poor through efficient and sustainable use of natural resources. Its main mission is to increase agricultural productivity and enhance socioeconomic aspects of stakeholders.

The SADS document towards 2030 has been prepared as an Egyptian led exercise that reflects national objectives and orientations, coordinated by the Agricultural Research and Development Council (ARDC), with support from Food and Agriculture Organization

(FAO), and inputs from International Fund for Agricultural Development (IFAD) and World Bank.

## **2 Lessons learned from previous agricultural development strategies**

Several lessons were learned from the application of the past strategies and were taken into consideration in preparing the SADS 2030. Foremost among these lessons are:

- Maximizing the returns of the economic reform should be based on reforming the pricing policies;
- Applied policies for utilizing the limited water resources have not led to the establishing of an agricultural environment clearly leading to rationalizing water use;
- In spite of enacting a clear policy to protect agricultural land from over-encroachment, violations continue to take place;
- Fragmentation of agricultural holdings constitutes a serious impediment to development;
- In spite of the successes achieved in the field of land reclamation, adding some 2.5 m/feddan to the cultivated area, the distribution system failed to establish viable communities capable of settling in the newly-reclaimed areas;
- Skilled labor is scarce due to the lack of balance between human resource development policies, investments, and agricultural development policies, while rural communities exhibit high rates of unemployment.
- Lack of coordination between national research institutions, and between research and extension services;
- Applied policies have not succeeded in achieving the optimum utilization of Egypt's historical and geographical base, and its relations with the Arabic, African and European economic groupings;
- The economic liberalization era has led to more market distortions that harmed producers and consumers while benefiting middlemen thus leading to unfair distribution of development returns;
- Coordination between different ministries and agriculture-related institutions is absolutely necessary;
- Some of the strategic objectives was not attain, due to weak implementation and follow-up mechanisms;
- The international trend towards further liberalization of agricultural trade is harmful, at a time of increase in food prices and supply disruption;
- The impending climate change due to the greenhouse effect with its probable negative effects on agricultural areas and the cropping pattern.

Vision of SADS 2030: "To achieve a comprehensive economic and social development based on a dynamic agricultural sector capable of sustained and rapid growth, while paying a special attention to helping the underprivileged social groups and reducing rural poverty".

Mission of SADS 2030: "Modernizing Egyptian agriculture based on achieving food security and improving the livelihood of the rural inhabitants, through the efficient use of development resources, the utilization of the geopolitical and environmental advantages, and the comparative advantages of the different agro-ecological regions".

### **3 Strategic objectives**

#### **I. Sustainable Use of Agricultural Natural Resources, with the following objectives:**

- Enhancing water-use efficiency in irrigated agriculture;
- Sustainable expansion of reclaimed areas;
- Sustainable development of land and water productivity;
- Maximizing the sustainable returns of rain-fed agriculture;
- Maintaining and protecting agricultural land;
- Human resources' development and creation of job opportunities, particularly the youth.

#### **II. Improving Agricultural Productivity, with the following objectives:**

Development of field and horticultural crops:

- Planting newly developed early matured varieties , with resistance to drought, salinity and pests;
- Increasing productivity of strategic crops;
- Developing long-medium staple cotton varieties with high economic returns; and
- Paying greater attention to integrated farm management and improved cultural practices.

Livestock development:

- Increasing *per capita* animal protein consumption by 4 g/day by the year 2030 is one of the main objectives of developing animal, poultry and fisheries production; and
- Reconstituting the animal food basket from the different sources in favor of the least-costly local sources;
- Better utilization of local feed resources;
- Improving veterinarian services and the control of zoonotic and transponder diseases.

#### **III. Increasing Competitiveness of the Agricultural Products in Local and Foreign Markets, with the following objectives:**

- Improving quality and standard of agricultural products to meet local & foreign market requirements;
- Improving marketing facilities and service and risk management measure;
- Improving pre- and post-harvest practices to improve product quality and reduce food losses;
- Rationalizing the regulatory role of the government in exercising control over agricultural inputs and outputs policies, as well as in consumer protection; and
- Improving the production to market chain linkages.

#### **IV. Achieving Higher Rates of Food Security in Strategic Goods, with the following objectives:**

- Promoting self-sufficiency in strategic food commodities (81% for wheat, 92% for maize, 93% for sugar, 93% for red meat, 99% for fish, by the year 2030);
- Improving consumption patterns in order to improve nutritional standards and vital bodily functions;
- Improving food quality and safety;

- Improving social safety nets, food support policies have to be reviewed, a specific proposal to discontinue present in-kind system and replace it with targeted financial or food coupons.

**V. Improving Opportunities for Agricultural Investment**, with the following objectives:

- Reviewing laws and procedures applied in land allocation and issuing title deeds;
- Reviewing credit policies of agricultural projects, enabling farmers and investors to use the areas allocated to them as bank collaterals;
- Preparing investing map in agriculture, defining areas assigned to different types of investments.

**VI. Improving Livelihood of Rural Inhabitants**

Improving the living standard of rural inhabitants is the core of the strategy mission through:

- Expanding activities in both the production and marketing of agricultural inputs and outputs in rural areas, as well as to establish integrated agro-industrial communities; and contributing to increasing job opportunities;
- Promoting and supporting small farmers' associations, particularly in the field of agricultural marketing; and
- Promoting the role of women in the different fields of rural development.

**VII. Investments Needed to Achieve the Strategy Objectives**

Based on estimated population and agricultural growth rates, total agricultural investments needed for the achievement of the strategy objectives have been estimated at about EGP 500 b, considering that the projected annual agricultural growth rate is 4% during 2009-2030. In case of a projected annual growth rate of 5%, this would require investments estimated at EGP 640 b until the year 2030. Consequently, investment expenditure for the year 2009 is estimated at approximately EGP 13.4 b, compared to EGP 8.4 b in 2008.

**4 Proposed implementation mechanisms for achieving the strategic objectives**

**I. Institutional Reform**

**A. Institutional reform of Ministry of Agriculture and Land Reclamation**, with the following objectives:

- Delineating the functions of the MALR and affiliated organizations in the fields of: research, extension, policy planning and follow-up, source of information, developing agricultural resources, providing infrastructure in the newly-reclaimed areas, and ensuring availability of agricultural inputs. The ministry would phase out its role in commercial production;
- Reviewing the institutional structure of different entities and units of the MALR, its relations with other entities, and defining the tasks compatible with their functions;
- The PBDAC should relinquish its role in distribution of agricultural inputs, and concentrate on its principal role of financing agricultural and banking activities;

- Consolidating the agricultural law and related laws, in order to keep abreast with the socio-economic developments and international treaties;
- Restructuring the agricultural extension service to serve newly emerging functions;
- Merging and strengthening entities responsible for elaboration of standards for agriculture inputs, Information Technology (IT), Technology Transfer (TT), and human resource development.

## **B. Reforming and supporting civil society organizations in rural development**

- Enacting a unified law to regulate the establishment of special-purpose associations;
- MALR to provide technical support to NGOs, and consider them as a principal partner with the agricultural research and extension services and programs.

## **C. Agricultural cooperatives' institutional reform**

- Amending Law 122/1982 in light of market economy requirements and international agreements;
- Reorient the role of the administrative machinery to serve interests of its members with democratic management and internal monitoring;
- Merging small cooperatives in one economically viable entity;
- Considering cooperatives as centers of disseminating modern technology in their line of operation and active in the field of agricultural development.

## **II. Reviewing and Developing Different Agricultural Policies**

Agricultural policies constitute the most important tools and mechanisms for improving the management of the agricultural sector for the general good of the society, without sacrificing farmers' interests.

### **A. Policies Related to Sustainable Use of Natural Agricultural Resources**

#### **a1. Rationalization of water resources use**

- Reviewing tax policies related to agricultural land, with a view to amending them so that tax assessment should be based on the area under cultivation, cropping pattern and the applied irrigation method;
- Introduction new concessional credit lines to encourage farmers to improve field irrigation systems.

#### **a2. Protection of agricultural land**

- Undertaking a comprehensive review of all applied laws and procedures to protect agricultural land based on stakeholders participatory approach;
- Establishing integrated housing plans for the Egyptian villages, with a view to developing a rural housing environment meeting farmers' needs.

#### **a3. Agricultural land maintenance**

- Classifying agricultural land in accordance with updated soil surveys;
- Planning and executing soil improvement programs.

#### **a4. Developing captured fisheries and aquaculture**

- Developing and restructuring the General Authority for Fisheries to enable it to carry out its responsibilities in monitoring, developing and extension services;

- Supporting Aquatic Resources' Cooperative Association and private sector to assume an active role in the improvement of fisheries products, opening new marketing channels, and modernizing fishing vessels.

**a5. Agricultural land expansion and settlement policy**

- Land reclamation maps should include all necessary elements for the development and settlement of new communities;
- Small farmers in the newly-reclaimed areas should form voluntary institutions, and providing needed support to enable it to carry out their role;
- Preparing a framework for investment opportunities in agricultural projects and other related and complementary projects.

**B. Policies to Increase Land and Water Productivity**

**b1. Scientific research and agricultural technology development policy**

- The ARDC to prepare national business plan for agricultural research which identify required research programs, necessary budgets and execution procedures;
- Exploring possible sources of finance for supporting research budgets including competitive grant funding.

**b2. Agricultural extension system development policy**

- Restructuring the agricultural extension system with a detailed business plan;
- Preparing and executing intensive programs for the training of extension workers and incentives to be based on their achievements;
- Integrating private sector participation in extension activities.

**b3. Role of communication and information technology in agricultural development**

- Strengthening the agricultural communication and information entity in MALR, through providing adequate human and financial resources;
- Paying special attention to village IT level with continued updating of networks.

**b4. Voluntary farmer associations' development policy**

- Enacting a law to regulate activities of the NGO active in the agricultural sector, to ensure flexibility relevance of their activities to agricultural development efforts;
- Providing appropriate support to encourage cooperative organizations and promote the concept of integrated action.

**C. Policies to increase the Competitiveness of Agricultural Products in Local and Foreign Markets**

**c1. Contract farming**

- Establishing specialized economic courts (this system has been recently introduced);
- Establishing a system to register agricultural marketing contracts; and introducing credit lines for providing suitable and timely loans to farmers, using contractual farming contracts as collaterals.

**c2. Agricultural commodity marketing**

- Reopening the Alexandria commodity exchange and cotton spot exchange, and establishing other commodities' exchanges for other corps;

- Establishing a system for settling the differences in financial positions at the closure of each trading session, at the rates decided by the prices committee.

### **c3. Agricultural commodities electronic marketing and trade**

- Establishing national rules and regulations for regulating electronic trade;
- Supporting the e-marketing system, through updating cost and price changes.

### **c4. Regional agricultural organizations**

- Establishing joint boards for agricultural cooperation with suitable investment opportunities in agriculture and food security sectors;
- Establishing secretariat at the MALR to monitor implementation decisions of the joint boards, executing projects for joint cooperation, and supporting regional cooperation.

### **c5. Inter-state cooperation with international organizations and agreements**

- Activating and supporting modalities for monitoring implementation of agriculture-related aspects in the international agreements, in line with national interests;
- Registration and documentation of brands, trademarks and national products, to protect Intellectual Property Rights (IPR); and applying national Sanitary and Phytosanitary Standards (SPS).

### **c6. Agricultural information system development**

- Developing and implementing information infrastructure at the MALR;
- Establishing data bases for supporting the strategic objectives and facilitating monitoring and evaluation activities.

## **D. Policies to achieve Food Security of Primary Food Commodities**

### **d1. Food safety**

- Establishing an Egyptian food and feed safety code of practice;
- Establishing Egyptian standards for maximum residues, food additives, preservatives, colors and flavor-enhancers.

### **d2. Rationalization of consumption support**

- Discontinuing in-kind food support and switching to a direct financial support system or financial support through food coupons;
- Applying a practical system to identify beneficiaries in accordance with objective incontestable standards.

### **d3. Improving agricultural investment opportunities**

- Reviewing agricultural investment laws and administrative procedures, particularly as related to land allocation and ownership for agriculture-related or complementary activities;
- Establishing a data base for appropriate agricultural investments, to be periodically updated.

## **E. Policies to Improve the Livelihood of Rural Inhabitants**

### **e1. Agricultural financial assistance**

- The government to cover part of the installments due on small farmers, who cultivate strategic crops, and comply with the national objectives of agricultural development;
- Insurance companies to develop implementation procedures.

### **e2. Strengthening the role of women in agricultural development**

- Providing educational, institutional and financial support to rural women entities to be able it to play its role in the implementation of the developing programs; and
- Introducing new concessional credit lines compatible with the economic conditions of rural women, and facilitating group lending procedures for women's associations.

### **III. Development Programs and Projects to achieve the following objectives**

#### **A. National program to rationalize and upgrade efficiency of water use in agriculture**

- Raising on-farm water use efficiency to 80%;
- Saving water quantities by modernizing on-farm water use to reclaim about 3.1 m feddans;
- Increasing the efficiency of rain fed agriculture, and reducing rainfall water losses and maximizing the utilization of ground water to supplement rain fed agriculture; and
- Establishing a modern and integrated national network for monitoring climate change affecting agriculture and ways to combating it.

#### **B. National program to maintain and upgrade the productive capacity of agricultural land**

- Protecting the productive capacity of agricultural land resources;
- Making use of the land classification system in analyzing negative changes; and addressing problems related to the dwindling productive capacity of agricultural land;
- Protecting agricultural land, rangeland and biodiversity against quantitative and qualitative deterioration;
- Maximizing the use of soil microorganisms and improved cultural practices in increasing soil fertility; and
- Developing and expanding the economic use of agricultural mechanization in different crops.

#### **C. National program to develop field crops**

- Increasing the areas planted to wheat to 4.2 m feddans, and increasing productivity to 3.7 tons/feddan;
- Reducing the areas planted to rice from approximately 1.6 m to around 1.35 m feddans, and increasing productivity to 5.2 tons/feddan;
- Expanding the areas planted to maize to reach 3.7 m feddans, and increasing productivity to 5 tons/feddan;
- Increasing the production and productivity of the cereal crops, particularly sorghum and barley;
- Increasing productive capacity of sugar from to 3.5 m tons, through increasing sugar cane production to 65 tons/feddan, and expanding the areas planted to sugar beet;
- Increasing the productivity of feed crops to reach 50 tons for perennial clover, 15 tons for the one-cut clover, and 50 tons for alfalfa;
- Expanding the areas planted to oil seed crops to reach 525 000/feddan, increasing productivity, expanding their cultivation in the newly-reclaimed areas; and
- Reducing pesticide use to the minimum levels required for combating agricultural pests based on Integrated Pest Management practices.

#### **D. National program to develop of horticultural crops**

- Quantitative and qualitative development of vegetable crops to cover local consumption and realize increased quantities for export;
- Increasing production and productivity of the fruit crops, particularly citrus, grapes, olive, pomegranate and mango, to improve water use and selection of drought and saline tolerant varieties;
- Expanding the areas of growing olive trees to 300,000 feddans, and increasing productivity to 8 tons/feddans;
- Expanding the areas of growing medicinal and essential oil plants to 200,000 feddans;
- Expanding the areas of growing cut flowers and ornamental plants, as well as increasing productivity and improving quality; and
- Expanding green belts and tree cultivation in the new reclaimed areas utilized drainage water.

#### **E. National program to develop of animal production**

- Increasing animal protein *per capita* by 4 g by the year 2030;
- Increasing average *per capita* consumption of locally-produced milk to 90 kg;
- Increasing red meat production from 670 000 tons to around one million tons;
- Developing the rural sector poultry and encouraging poultry industry;
- Raising *per capita* consumption of locally produced fish to approximately 18.5 kg;
- Protecting livestock, poultry and fisheries against veterinary endemic and trans-boundary diseases; and
- Protecting consumers against common diseases transmitted from animals to humans.

#### **F. National program for the socio-economic development of rural areas**

- Improving the living conditions of rural women and enabling them to participate positively and actively in the different activities;
- Diversifying income-generating rural agricultural activities and other off-farm and complementary activities;
- Reviving rural industries and handicrafts and applying modern production and marketing systems; and
- Creating value added activities favoring small farmers, particularly the economic utilization of agricultural residues.

#### **G. National program to develop and modernize marketing and agro-industries**

- Reducing pre- and post-harvest losses;
- Improving the quality and competitiveness agricultural products to suit local and foreign markets needs;
- Enhancing vertical integration linkages between production and marketing, as well as keeping farmers informed of market conditions and variables;
- Increasing farmers' abilities to participate in the processing and exportation of their products;
- Providing a good information base for all interested parties;
- Promoting and supporting agricultural small- and medium-size processing industries.

#### **H. National program for agricultural research, extension and technology transfer**

- Maximizing the sustainable levels of human resources and productivity of both land and water;
- Protecting the qualitative and quantitative characteristics of agricultural natural resources;
- Applying modern technology to the development of disease- and pest-resistant varieties, and climatic adverse conditions tolerant varieties, as well as reducing the period needed to develop new varieties using modern biotechnology tools;
- Promoting the productive efficiency of livestock, poultry and fisheries;
- Positively responding to the probable adverse effects of the climate change on agricultural production;
- Evaluating generated technology packages based on their economic reform; and
- Developing agricultural extension modalities and approaches, through Technology Transfer (TT).

**I. National program for settlement and encouraging investments in agriculture and agriculture-related projects**

- Establishing the physical foundations necessary for settlement areas and agricultural investment, including infrastructures and services; and
- Promoting complementarities between infrastructures, services and supporting facilities to ensure success of settlement projects in the newly developed areas; and
- Popularizing investment opportunities, providing information, and carrying out needed studies that would help investors and businessmen in decision-taking.

**J. National program to increase the competitiveness of the Egyptian agricultural products in local and foreign markets**

- Increasing competitiveness, through upgrading national Sanitary and SPS;
- Mitigating the risks of negative effects related to changing international markets;
- Promoting the presence of Egyptian agricultural products, and exporters in international events (marketing events and fairs, etc.) in order to increase exports.

**K. National program for capacity building of agricultural human resources;**

- Upgrading the scientific and technical skills of research, extension and technology transfer staff;
- Upgrading the scientific and technical skills and expertise of staff working in the fields of agricultural policies' designing, analysis, monitoring and evaluation;
- Strengthening linkages between agricultural education programs, graduates and the requirements of the labor market.

**L. National program to promote the role of communications and information technology in agricultural development**

- Establishing and developing modern networks linking the different sectors as well as individuals at all levels;
- Modernizing and developing hardware needed for raising the efficiency of agricultural information and communications systems particularly at the village level;
- Ensuring the overflow of information and making information available to all the parties concerned with agricultural development.

## **5 Capitalizing on agro-ecological advantage**

Previous agricultural development strategies did not pay specific attention to the endowment of Egypt's agro-climatic regions, adopting a generic approach primarily linked to the Central National Plan. SADS 2030 adopts a bottom-up approach based on participatory methods at local levels. This approach stems from the concern to improve national resources and utilize the agro-ecological advantage of the main five agriculture regions.

### **I. Future agricultural development opportunities in Upper Egypt**

- Expanding the application of modern technologies in the production of sugar cane, introducing the cultivation of sugar beet, and establishing sugar factories in the New Valley;
- Expanding the cultivation of high-value leguminous tree species suitable for the region's climate;
- Promoting the production of dry and semi-dry date varieties;
- Establishment of infrastructure link between areas under horizontal expansion and other communities;
- Promoting organic agriculture to meet export requirements, as well as producing early maturing vegetable and fruit varieties, and expanding the areas planted to olive trees.

### **II. Future agricultural development opportunities in Middle Egypt**

- Increasing the productivity of long-medium staple cotton varieties;
- Promoting contract farming of vegetables, oil seed crops and aromatic pastes, for processing purposes;
- Increasing the productivity of the main crops, especially wheat and maize;
- Establishing infrastructure and institutional frameworks to promote production of medicinal and aromatic plants, as well as protected agriculture;
- Promoting livestock production especially for meat and milk.

### **III. Future agricultural development opportunities in Eastern Delta**

- Assigning high priority to agricultural development in Eastern Delta area and Sinai;
- Establishing infrastructure and institutional frameworks production for export commodities including organic products;
- Promoting the production of the main crops (wheat, rice, groundnut and clover), as well as expanding the cultivation of sugar, and fodder beet;
- Developing the production of drought resistant horticultural crops such as (mango, peach, olive and citrus); and
- Promoting captured fisheries, as well as sea aquaculture off the shores of Sinai.

### **IV. Future agricultural development opportunities in Western Delta**

- Promoting the cultivation of horticultural crops, for processing and export purposes, and establishing an institutional framework for contractual cultivation;
- Developing a program to conserve the elite animal breeding stocks;

- Establishing the necessary infrastructure for expanding the cultivation of olive trees;
- Promoting inland as well as off-shore aquaculture;
- Increasing the productivity of the main crops cultivated in this region (wheat, cotton, clover, rice and potatoes), to reach maximum levels;
- Developing suitable policies to establish agro-industrial communities in the region;
- Developing rain-fed agriculture based on sustainable supplementary irrigation systems for water use.

#### **V. Future agricultural development opportunities in Middle Delta**

- Increasing the productivity of the main crops (wheat, clover, maize, cotton and citrus);
- Making available suitable technologies for the development of aquaculture and developing a marketing system for aquaculture products;
- Establishing the infrastructure and the institutional frameworks necessary to promote specialization in producing milk, poultry and fisheries products;
- Paying greater attention to crop intensification and the introduction of the cultivation of the multi-foliolate clover in rotation with rice;
- Developing and promoting rural and environmentally sound industries and income generation.

## **6 Monitoring and Evaluation Systems**

To implement the proposed strategy, priorities have to be established with identified phasing schedules in the short, medium and long term. Laws and policies have to be reviewed and revised in line with strategy objectives. Impacts at the regional and national levels should be prepared to measure inputs, outputs and outcomes. The following four salient aspects deserve closer attention:

- Provide an institutional mechanism capable of coordinating the performance of all institutions active in the agricultural sector, whether they are part of the MALR, other ministries and public and private sector entities; and
- Include stakeholders' representatives from the private sector and the civil society, and representatives from government entities and institutions active in agriculture;
- Commissioning the ARDC to undertake periodical monitoring and evaluation of the agricultural development strategy;
- Establishing three technical units for monitoring the implementation of business plan of action; monitoring and evaluation unit, policies analysis unit, and risk management and mitigation unit.



Founded in 1962 at the joint initiative of the OECD and the Council of Europe, CIHEAM is an intergovernmental organisation comprising thirteen member countries from the Mediterranean Basin (Albania, Algeria, Egypt, Spain, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Tunisia and Turkey).

CIHEAM is made up of a General Secretariat (Paris) and four Mediterranean Agronomic Institutes (Bari, Chania, Montpellier and Zaragoza).

In pursuing its three central missions (education, research and cooperation) CIHEAM has established itself as a reference in its fields of activity: Mediterranean agriculture, food and rural development.

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