THE EGYPTIAN AGRICULTURAL EXTENSION SERVICE: HISTORY, STRUCTURE, AND CHALLENGES

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Abstract

Agricultural extension is an adult learning system implemented by an integrated system consists mainly of volunteers, extension agents, subject matter specialists, and local leaders to serve farmers, their families, and their environments, to help them help themselves in raising their socio-economic standards through bringing about desired changes in their knowledge, skills, and attitudes (Omar, 1992).

The main objective of this research was to identify features of the Egyptian Agricultural Extension Service. Affiliated with that main objective, some other objectives were determined. Those related objectives were: to identify the current situation of the Egyptian agriculture, to identify history of the Egyptian agriculture extension service, to identify organizational structure of the Egyptian Agricultural extension service, to determine some critical obstacles that obstruct impact of the Egyptian agricultural extension service, and to identify challenges that encounter efforts of the Egyptian agricultural extension service.

INTRODUCTION

Agricultural extension is defined as an educational system, directed toward farmer, farmer's children, farmer's wife, and all farmer family members, provides them with the latest and most successful agricultural applied research and technology that proved to be successful under the circumstances of farmer's field as a way to increase their incomes and raise their standard of living (Schmittou, 1984). Omar (1992) identified agricultural extension as an adult learning system implemented by an integrated system consists mainly of volunteers, extension agents, subject matter specialists, and local leaders to serve farmers, their families, and their environments, to help them help themselves in raising their socio-economic standards through bringing about desired changes in their knowledge, skills, and attitudes.

Swillam (1987) stressed that agricultural extension roots were stemmed basically from agricultural education and that extension program was built upon the concept of adoption and positive responses to farmers' demands in their local

communities. This made the idea of agricultural extension differ from the sole concept of technology transfer. Maunder (1973) mentioned that agricultural extension is an educational process directed basically to population of rural areas, and in particular farmer and his family members, as a way to transfer findings of applied researches that were proved to succeed and fit farmer's field, through convincing him peacefully to adopt and implement them. It contributes in increasing farmer's family income and raises their standard of living. Agricultural extension was identified also as an informal educational system, a system for serving males and females (gender), implemented as an adult educational type, and encompass a combination of different ages, cultures and experiences (Abdel-Ghaffar, 1976, El-Adly, 1972).

Agricultural extension is built upon some related bases and principles: (1) agricultural extension is directed towards responding positively to individuals' needs, (2) agricultural extension is built basically upon planned and cooperative local programs that respond to solve some real problems in reliance with the identified resources, (3) farmers participate positively, as one of the stakeholders, in planning, implementing, and evaluating the proposed programs, (4) proper agricultural communication methods and aids are used effectively, (5) indigenous knowledge and experiences are used and integrated with the academic knowledge, (6) voluntary work should be encouraged and exploited positively, (7) agricultural extension programs should encourage and develop local community leadership, and (8) agricultural extension should seek help of subject matter specialists in accordance with the situation needs (El-Ghamrini, 2006, Omar, 1992, El-Adly, 1972).

Anderson (2003) pointed out that number of agricultural extension agents worldwide is about 800,000, ninety percent of them are in the Third World, 80% of their financial resources come from governmental sources and with governmental extension agents, 12% provided by universities and Non-Governmental Organizations (NGOs), and the rest (5%) is provided by private sector.

Agricultural extension development efforts, during the last four decades, are considered the biggest known by the world including those benefited by those efforts and those who presented them (Abdel-Al, 2006). There were about 26,000 individuals working in the Egyptian Extension Service (Omar, 1992). This number encompasses agricultural extension agents, subject matter specialist, supporting teams, contact farmers, and local leaders. Nowadays, the number is getting sharply down because of the current general Egyptian governmental policy of employment.

The Characteristics of public extension systems in developing countries, including the Egyptian one, are determined by their financial shortcomings and many related problems. They are characterized with: (1) governmental ministry related, (2)

existing separately from research or teaching institutions, (3) operating under a centralized hierarchal administrative make-up, (4) all inclusive in scope: educational, supply service and regulator functions combined in a single agency, (5) under pressure of physical production targeted and tending to implement predetermined programs, and (6) subject to great political control, even with respect to hiring. These characteristics account for the top-down nature of many extension services in developing countries (Singh, 1967).

In general, extension is a component part, or a system operating with other interrelated agricultural systems for agricultural and technology development. Different agricultural extension systems, including that of Egypt, are shaped by many factors. Among these are larger determinations regarding sector, institutional structure and its arrangement, agricultural product-oriented goals, and target populations. These factors shaped the way the system is controlled, its purposes and client orientation.

Research Objectives The main objective of this research paper was to define some features of the Egyptian agricultural extension service. Affiliated with the main objectives, some other objectives were identified: to identify the current situation of the Egyptian agriculture, to identify history of the Egyptian agriculture extension service, to identify organizational structure of the Egyptian Agricultural extension service, to determine some critical obstacles that obstruct impact of the Egyptian agricultural extension service, and to identify challenges that encounter efforts of the Egyptian agricultural extension service.

ARICULTURAL SITUATION IN EGYPT

Egypt has an area of 100.51 million hectares. It is considered, as a whole, as a desert land with annual rain rate of less than 100 mm in about 98% of the total area, and only 2% with an annual rain rate of 100-250 mm. The Egyptian annual quota of the Nile's water is 55 billion cubic meters. Nasser Lake has a capacity of storing 125 billion metric tons. Egypt has also about 6.5 billion cubic meters. The Egyptian agricultural land was formed as consequence of the accumulated mud over many years on the two sides of the river's bank. The Egyptian agricultural lands represent only 2.6% of the total Egyptian lands.

The Egyptian population increased from 10.5 millions in the first decade of the twentieth century to 64 millions in the year 2000, and is expected to reach 76 millions in the year 2012. As a result of the increasing population, land demand has been increased for housing and basic infrastructure. This led to take some agricultural lands to be used for those urgent needs. Development of lands in the Delta and the

river's banks throughout five consecutive decades can be summarized as the following:

1. The Egyptian agricultural land increased from 2.1 million hectares in 1950, to 3.22 million hectares in the year 2000. Egypt lost vast areas of the new agricultural land in the Nile valley and Delta as a way of encountering the construction and housing expansion which reached its zenith during the eighties and nineties of the last century.
2. The most distinguished agricultural change in relation with agricultural land outside the Nile Valley and Delta was that occurred in the eastern Delta and North Sinai when a big irrigation canal was constructed to drag The Nile water (Damietta Branch). The Reclaimed land in those areas was 240 thousand hectares.
3. The per capita ratio of the fertile agricultural land located in the Delta and Nile Valley decreased to 81.6 % from the total agricultural area in the year 2000 after it was represented 99.9% in 1950.
4. Despite the increase in the Egyptian agricultural land of about 53% during a period of five decades, per capita agricultural land was decreased from 913 square meters in 1950 to 503 square meters in the year 2000.
5. Agricultural density to agricultural land unit increased from 125% in 1950 to reach 193% in the year 2000. This implies that the cropping area reached 2.6 million hectares in 1950 and jumped to be 6.2 million hectares in the year 2000. This equals about three times the cropping area of 1950.
6. Egypt could increase the cropping density, after it modified its irrigation system as a result of the construction of the High Dam and availability of irrigation water adequately all the year that enabled the Egyptians to cultivate the same hectare twice a year instead of once a year.
7. Egypt lost a big area of the most fertile cultivated lands in the Nile Valley and Delta for population housing and different infrastructure (non-agricultural purposes) which reached about 200 thousand hectares during the period 1970-2000. This came despite the government's encouragement for building in the desert outside the agricultural area, and the harsh legal procedures against those who violate the law and regulations.

Table (1) shows some indicators including development of per-capita agricultural land, cropping density, The Nile and Delta area, and per-capita agricultural land area in Arab Republic of Egypt during the period 1950-2000.

Competition for acquiring agricultural land has been intensified between the Egyptian Ministry of Agriculture, from one side, against industry, tourism, housing, and services sectors that ended with an Egyptian loss to about half a million hectares of the best fertile agricultural land. On the other hand, the Egyptian government reclaimed a total area of about 350 thousand hectares during four decades (1960-2000). Improper governmental policies aggravated the scene.

Table 1. Some Agricultural Development Indicators in Egypt

Indicator	1950	1960	1970	1980	1990	2000	2012 (Expected)
Ag. Land Area (in million hectares)	2.10	2.52	2.73	2.64	2.75	3.22	3.22
% Agricultural Land Area of the Nile Valley and Delta	99.9	99.2	99.1	99.0	96.9	81.4	74
% Irrigated Reclaimed Ag. Land Area Outside the Nile Valley and Delta	1.25	1.46	1.55	1.78	1.86	1.95	-
Per-Capita Ag. Land Area (in square meter)	913	933	810	585	474	503	418

Source: El-Kassem (2004).

TUSHKA AGRICULTURAL PROJECT The Egyptian Agricultural Tushka Project is located north and west of Nasser Lake. The conducted studies indicated that it is possible to reclaim 550 thousand Hectares that have lower level of about 200 meters than Nasser Lake. The main feature of Tushka Project can be indicated as the following:

1. The project is designed to take 5.5 billion cubic meters annually of the High-Dam water and dragged them throughout a canal to about 100 kilometers along Nasser Lake. The Water will be taken at a level of 147.5 meters (level 40 meters below Lake Nasser water level which will help easy release of water). The irrigation canal is designed to drain about 25 million cubic meters daily in summer and about 8 million cubic meters in winter. The used pumps take its electricity from the High Dam Source,
2. The project main goal is to reclaim and cultivate 500,000 hectares on stages. By 2012, it is planned to develop and cultivate 50,000 hectares.
3. Non-Traditional agriculture (ways and crops) is planned to be implemented in Tushka Project. Crops for export, use of organic agriculture, and the modern agricultural technology and procedures are the basic criteria for agriculture in this virgin area,

4. The project will add, after its completion, about 500,000 hectares of agricultural lands equal to about 15% of the Egyptian irrigated total area, and
5. The main obstacles that encounter this project are that it requires big investments and financial resources. Consequently, the Egyptian government allowed other Arab countries and investors to participate and invest in this project.

EVOLUTION AND DEVELOPMENT OF THE EGYPTIAN AGRICULTURAL EXTENSION SERVICE

The Egyptian Agricultural Extension Service (system) started formally in 1944 as different agricultural units, changed to a department for agricultural extension in 1953, and was modified to an independent under-secretariat for agricultural extension in 1963 that was reorganized during the years 1968, 1980, 1988.

The Egyptian ministerial decree of 21 in 1983 divided the Under-secretariat for Agricultural Extension into three integrated administration units: general or applied extension, specialized extension (subject matters), and research & evaluation.

At the present time, the Central Administration for Agricultural Extension is responsible for applied agricultural extension and technical subject matters, while Agricultural Extension and Rural Development Research Institute (AERDRI) is now responsible for agricultural extension research. The Egyptian Agricultural Extension Service is supported by different subject research institutes (Agricultural Research Center with its affiliated institutes, Different Egyptian universities, and the Egyptian National Research Center (El-Kholy *et al.*, 1984, Omar, 1992).

STRUCTURAL ORGANIZATIONAL DEVELOPMENT OF THE EGYPTIAN AGRICULTURAL EXTENSION SERVICE

Abdel-Al (2006) mentioned that the Egyptian Agricultural Extension Service started first with some limited efforts conducted by different agricultural cooperatives and agricultural inputs companies, and was directed basically to serve big farmers.

In 1944, the Egyptian Agricultural Extension Service began formally with responsibility of disseminating different agricultural extension service by the Egyptian Ministry of Agriculture. After the Food and Agricultural Organization of the United Nations (FAO) conference was held in 1950, the Egyptian Agricultural Extension Service began to appear as a department related to Agricultural Cultural Authority, then turned in 1960 to general administration encompassed agricultural extension and training services.

The situation was changed positively in the late sixties to become an independent under-secretariat, and the Supreme Council for Agricultural Extension

was formed also to put different integrated policies that direct agricultural extension policy.

In the seventies, intensified interests and efforts were exercised in different Egyptian governorates with expanded scope and work scale in relation with extension service. In the eighties the Egyptian Agricultural Extension Service became affiliated with Agricultural Research Center. The Central Administration for Agricultural Extension was formed. Egypt was divided into different administration units. In the mid nineties, role of agricultural cooperatives was diminished, and a program for disseminating agricultural extension centers in some Egyptian villages was adopted.

The present structure of the Egyptian Agricultural Extension Service can be divided into five interrelated levels: national level, zone level, governorate level, district level, and village level. The Central Administration for Agricultural Extension is located on the national level. The Central Administration has 15 general administration units (follow-up and monitoring, extension programs, extension means, extension centers, crop renaissance, horticultural extension, the new lands, rural development, agricultural councils/boards, agricultural units, animal extension, sugar crops, oilseed crops, financial and administrative affairs, and technical bureau). Each general administration unit is working in parallel with a research institute related to the Egyptian Agricultural Research Center (A.R.C).

The Central Administration for Agricultural Extension has the responsibility of spreading extension within nine zones. Those zones represented the second level of the organization (north of the delta, west of the delta, north and middle of the delta, east of the delta, south and middle of the delta, north of upper-Egypt, mid Egypt, upper Egypt, the East-northern coast). Some departments that represent different general administrative units of the Central Administration for Agricultural Extension (Ministry of Agriculture) are affiliated with those zones.

The third level is the governorate level where there's agricultural extension administration unit in each sub-zone (Mudiriat). Affiliated with the level different departments representing general administration units, the departments related to the Central administration for Agricultural Extension, and different agricultural extension zones. The fourth level is that of the district where there is a department for agricultural extension. The organizational hierarchy ends with village level where agricultural extension agents are working with farmers.

On the other hand, there are some modern agricultural extension centers in some village, affiliated with the Central Administration for Agricultural Extension (Ministry of Agriculture), that work independently from the traditional agricultural extension service (Abdel-Maksoud, 2006). Figure (1) shows organizational

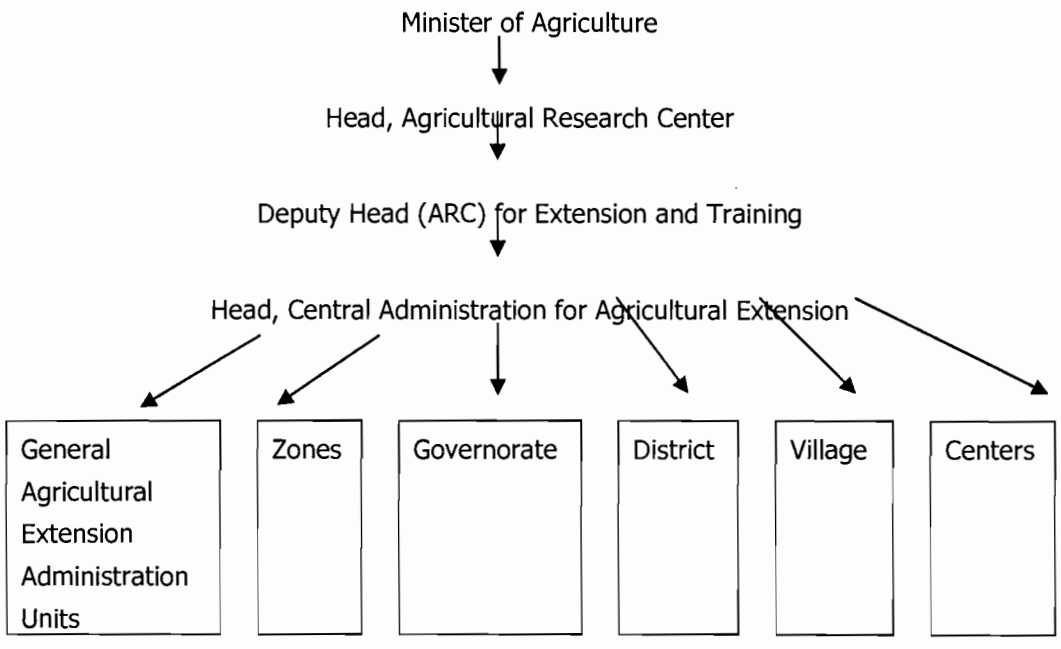

Figure 1. Organizational Hierarchal Structure of the Egyptian Agricultural Extension Service.

General Administration Units

1. Follow-Up and Monitoring
2. Extension Programs
3. Extension Means
4. Extension Centers
5. Crop Renaissance
6. Horticultural Extension
7. New Land Extension
8. Rural Development
9. Agricultural Councils (Boards)
10. Agricultural Extension Units
11. Animal Extension
12. Sugar Crops
13. Oil-Seed Crops
14. Financial and Administrative Affairs
15. Technical Bureau

Zones Composed of eight Extension Zones encompassed number of governorates (Four in the Delta, 3 in Upper Egypt and one in the North Eastern Coast).

Departments of :

1. Follow-Up and Monitoring
2. Extension Programs
3. Extension Means
4. Extension Centers
5. Crop Renaissance
6. Horticultural Extension
7. New Land Extension
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9. Agricultural Councils (Boards)
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Figure 2. General Administration Units Affiliated with Central Administration for Agricultural Extension Service and Constituent Departments of Extension Zones.

hierarchal structure of the Egyptian Agricultural Extension Service, and Figure (2) general administration units affiliated with Central Administration for Agricultural Extension and different constituent departments affiliated with extension zones.

In addition, different organizations and private firms have their own extension service. This type of extension is mostly related with specialized organizations such as the General Authority for Fish Resources Development, agricultural inputs organizations, and private companies for selling agricultural inputs etc.). Consequently, there has to be some kinds of coordination (and sometimes integration) between the mother extension service and those specialized extension organizations. Furthermore, there are also some private extension consultancies offices provide farmers with needed extension

services. Some regulations and legal bases should be introduced to organize those private extension activities.

The Egyptian Agricultural Extension Service has relatively strong linkages with scientific researches {about 14 agricultural faculties, two institutes for agricultural cooperation, 53 agricultural high schools, Agricultural research Center specialized Institutes (14 institutes and five laboratories), including Agricultural Extension and Rural Development Research Institute, Desert Research Center, and National Research Center}. An electronic network is available for connecting research, extension, and farmers together (Rasslan, 2007). The Egyptian Agricultural Extension Service is playing, to some extent, an undeniable role in supporting efforts for the conducted campaigns related to family planning, rural woman development, and illiteracy eradication.

In general, it is possible to summarize the organizational hierarchal structural levels of the Egyptian agricultural extension service as the following:

(1) Central Administration for Agricultural Extension (national level) where there are 15 different general administration units affiliated with it, (2) Agricultural extension zones (9 zones) encompassed departments representing the general administration units of the Central Administration for Agricultural Extension are affiliated with each zone, (3) Governorate level that encompassed an administration unit of the sub zone (Mudiriat) with departments representing general administration units and departments of the Central Administration for Agricultural Extension, (4) District level where agricultural extension department and some branches affiliated with it, (5) Village level where agricultural extension agents are working directly with farmers, and (6) Agricultural extension centers that are working in an independent way from traditional agricultural extension service.

Obstacles and Challenges Encountered the Egyptian Agricultural Extension Service

I. Obstacles that Impede Efforts of the Egyptian Agricultural Extension Service

The main obstacles, or shortcomings, that encounter the Egyptian Agricultural Extension Service are: unavailability of enough funds, resource weakness especially in transportation, weakness of investment budget assigned for the sole extension work, improper employment policies in Ministry of Agriculture and affiliated sectors, weak availability of coordination among organizations working in extension, weak extension efforts towards rural woman development, weakness of extension representation in policy-making, weakness of coordination between agricultural extension service and different service authorities, duplication of instructions issued to agricultural extension agents, deficiency of training (induction and in-service training), privatization problems, small agricultural ownerships, low absorption of new technology (computers, communication aids, etc.), low farmers' participation in planning, implementing, and evaluating extension programs, low voluntary efforts.

II. Current Challenges that Face the Egyptian Agricultural Extension Service

Current critical challenges that encounter the Egyptian Agricultural Extension Service can be identified in the following:

1. Rise of a new class of farmers who are mainly from other disciplines, not agriculture, including military and police elite, businessmen, ministers, writers, reporters, and many others who, and to some extent their families, have no history in agriculture. Most of them have vast agricultural lands supported with enough financial and technical resources. Most of their produced agricultural products are marketed overseas. Those new farmers have different characteristics than the traditional Egyptian farmers. They are rich, speak different languages, computer literates, and with an access to international and local distinguished agricultural extension centers. Those new farmers have strong associations with authorities that may play a role in acquiring benefits to their members as interest groups. The Egyptian agricultural extension still has the responsibility to narrow the gap between those new farmers and the traditional poor-illiterate ones. Different proper mechanisms should be taken,
2. Exploitation of new reclaimed areas such as Tushka, Halayeb, and Shalatin that need new form of extension service different from the available traditional one (Hemari, 2007). Some areas like the New valley, and desert oases have already different forms of extension service, and
3. Expansion of using electronic media and computer software in meeting needs of the new entered customers. This may require well trained extension agents equipped with the needed skills and have the capability and interest to learn and absorb new agricultural technologies, knowledge, and skills.

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التنظيم الإرشادى الزراعى المصرى: التاريخ والبنية والتحديات

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مستخلص البحث

الإرشاد الزراعى هو تعليم غير مدرسى يقوم به جهاز متكامل من المهنيين والقادة المحليين خدمة للمزارعين وأسرهم وبيئتهم، ومساعدتهم على مساعدة أنفسهم فى إستغلال إمكاناتهم المتاحة وجهودهم الذاتية لرفع مستواهم الإقتصادى والإجتماعى عن طريق إحداث تغيرات سلوكية مرغوبة فى معارفهم ومهاراتهم واتجاهاتهم (عمر، ١٩٩٢ :١١).

استهدف البحث فى المقام الأول التعرف على بعض ملامح الجهاز الإرشادى الزراعى المصرى، وإنبثق عن هذا الهدف الرئيسى بعض الأهداف الفرعية هى: التعرف على الوضع الراهن للزراعة المصرية، والتعرف على تاريخ تطور الجهاز الإرشادى الزراعى المصرى، والتعرف على البنية التنظيمية للإرشاد الزراعى المصرى، والتعرف على العقبات التى تعوق عمل الجهاز الإرشادى الزراعى المصرى، وكذلك التحديات الراهنة التى تواجه الإرشاد الزراعى المصرى.