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Reforming the Agricultural Extension Services in Egypt:

The Case of the Farmers Field
Schools in Qena

Egypt Network for Integrated Development

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Promoting Farmers Field Schools (FFS) is a Necessity for Expediting Technological Transfer and Enhancing Small Farmers Participation in Egypt

Key Messages:

- (1) Improve Coordination between agricultural education, Research and Development, and Extension Services/Policy Advice in Agriculture.
- (2) Upscale implementation of Farmers Field Schools and Livestock Development Caravans as a cost-effective and integral part of a comprehensive programme for restructuring and improving extension services in Egypt.
- (3) Improve the quality of agricultural education (university and secondary/vocational) keeping in mind international standards for excellence and labor market needs for implementing national strategies, programmes and projects in Egypt.
- (4) Increase the budget allocation for agricultural research and extension services with emphasis on enhancing human and financial resources for field work.
- (5) Introduce a results based monitoring and evaluation system for research and extension services at the Center and Governorates levels to ensure adoptability and sustainability of technology transfer.
- (6) Regulate the private sector participation in providing extension services under government supervision in order to strengthen the role of the private sector in complementing the Government efforts.
- (7) Modernizing extension systems to be compatible with the recent developments in information and communication, for maximizing the benefits of available research and extension experiences.

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I **The Extension Services in Egypt: The need to move faster**

During the last three decades, Egypt has been able to establish agricultural research and extension systems that have been able to support agricultural performance to such a level that helped double the production of several crops, improve product quality, and increase product market competitiveness. In spite of this, all indications emphasize that the utilization rate of these systems is incompatible with their potentialities. This is due to reducing their annual budgets which are barely enough to cover wages and salaries, leaving negligible appropriations for research programmes and activities. The estimated funding of the Ministry of Agriculture's main research centers; namely the Agricultural Research Center (ARC) and the Desert Research Center (DRCT) is very low, and the budgets of research and extension barely exceed 0.01% of the share of agricultural in national income. Such budgets cannot be compared to the budgets of research and extension institutions in the developed countries, or even in some developing countries, ranging between 2.5 – 3.0% of the annual share of agriculture in the national income². However, in spite of the limited financial resources allocated to research and development, such resources are grossly misused. Research topics are repeated, and are poorly related to development problems and issues that need to be addressed. There is also lack of coordination between the roles played by the different research institutions due to the lack of a national research strategy/plan according to which all agricultural research institutions collaborate and exchange experiences for the general good. Private funding for agricultural research in Egypt is rather limited.

There is a strong link between Agricultural Extension, Agricultural Research and Agricultural Education. The recent efforts to improve the technical capacities of human resources in agricultural extension need to move faster and the allocated budget for agricultural research and extension needs to increase drastically.

The agricultural extension service in Egypt is facing several other challenges. These challenges hinder its capacity to reach farmers in general and small farmers in particular and to transfer technology and modern practices to them.

Coordination between training/education, Research and Development, and Extension/Policy Advice in Agriculture is weak. Despite the presence of faculties of agriculture and research centers in Upper Egypt, as well as government extension services, farmers lack appropriate technical advice regarding non-traditional crops and animal husbandry. Improving the extension services in Upper Egypt and the quality of information available to small farmers are crucial for achieving growth in the agriculture sector and for integrating small farmers into the supply and exports chain.

In Egypt, the majority of research and extension workers are near retirement age. Because of the inverted pyramid nature of the research staff in the Ministry of Agriculture and the Agriculture Departments at the governorates level, there is a risk of lack of continuity and inadequate transfer of knowledge and experience from one generation to another. According to the statistics of the Central Administration of Agricultural Extension³, about 40.3 % of the extension workers fall in the age group of 41-50 years and about 49.7 % fall in the age group of 51-60 years. At the same time only 13.4 % of the extension workers are females. The gender imbalance of extension workers is especially significant in Upper Egypt. Great numbers of male farmers migrate to large cities and

² World Bank, Arab Republic of Egypt, Linking Funding to Outputs, Expenditures of the Ministry of Agriculture and Land Reclamation issues paper, 2009.

³ Ministry of Agriculture and Land Reclamation, Central Administration of Agricultural Extension, Unpublished Statistics, 2010.

resort areas to work in the construction and tourism industries. They leave behind their wives to cater to the needs of the farm. In essence there is a trend for agriculture feminization.

II The Quest for an Effective Extension Services: Boosting Productivity through the Promotion of FFS

National Efforts

For a long time, agriculture in Egypt has relied on biological technology in increasing the productivity of the main crops, particularly cereal, sugar, fibre, vegetable and fruit crops, through the development of new high-yielding and disease- and pest-resistant varieties. For example, cereal crops have witnessed the highest increase in land productivity. Wheat productivity has doubled from around 1.36 tonnes/ feddan in 1980 to 2.72 tonnes/ feddan in 2007. Productivity of sugar crops has also been increased by around 44% for sugar cane, 80% for sugar beet. Sugar cane productivity reached the highest level internationally, with 50.8 tonnes/ feddan, while sugar beet productivity reached 22 tonnes/ feddan in 2007. As to vegetable crops, the introduction of new varieties, expansion of protected agriculture, modernizing irrigation systems and developing fertilizer regime have led to significant increases in the productivity of the majority of vegetable crops. Tomato productivity for example rose from 7.4 tonne/feddan in 1980 to 16 tonne/feddan in 2007, an increase of 116%⁴. Also, the development of fruit crops has been remarkable. Productivity increased to unprecedented levels, quality traits of several varieties has been improved, such as grape where seedless high-yielding varieties have been introduced at the expense of seeded varieties. The new varieties include early- and late-maturing lines, resulting in prolonging the supply period. As a result of these efforts, grape productivity increased from 5.2 tonnes/ feddan in 1980 to 9.9 tonnes/ feddan in 2007. However, it is noteworthy that the present productivity is below the productive capacity of the planted varieties, and that there are great possibilities for increasing it, at rates between 25 – 50%, through improving agricultural practices and farm management. This could be only achieved through improving the extension services and introducing FFS.

In 2014, a committee was established to coordinate the national efforts of the Ministry Education, Ministry of higher education, Ministry of vocational education and training, Ministry of Agriculture and Land Reclamation, Agricultural research center, water resources research center, desert research center to ensure desired harmony among agricultural education, agricultural research and agricultural education. However, the committee seems to seize working due to changing top managements in these institutes.

ENID experience: The Model

FFS

Due to the obstacles facing agricultural extension services in Egypt and despite the efforts dedicated to enhancing it, the services being offered to smallholders are insufficient, practically non-existent. Smallholders, therefore, tend to revert to using traditional agricultural practices and growing traditional crops for the purpose of subsistence agriculture. Considering the prominence of extension services to any strategy that aims to develop the agriculture sector, The Sustainable Agricultural Development Program of the Egypt Network for Integrated Development (ENID) has been strongly devoted to the improvement of agricultural extension services in Qena through the introduction of Farmers Field Schools (FFS). The program has focused on the education of supervisors and farmers as well as providing the equipment and resources necessary for vocational

⁴ Ministry of Agriculture and Land Reclamation, "Sustainable Agricultural Development Strategy till 2030", Cairo, 2010.



training. The program has also worked on introducing non-traditional crops and food processing, and engaging rural women in training programs.

FFS constitute a training program that lasts for one whole season, with training activities focussing on the different stages of crop development and the procedures needed to face the various challenges that might arise throughout this period. Field schools are unofficial educational programs that focus on facilitation and farming. They are run in a participatory manner through development programs that aim to improve the economic, social, and cultural standing of farmers by offering them sessions in literacy, and health and environmental awareness. The farmer field school model combines expertise from various sources (farmers, researchers, extension staff and others), encouraging the exchange of information between the various parties involved, unlike traditional extension methods, where one-way learning is more common.

In planning for the FFS, ENID depended mainly on the needs of farmers as well as the training needs of agricultural extension workers and agricultural facilitators. This was made possible by numerous meetings with staff members from the agricultural directorate, agricultural extension officers, department of veterinary services, and farmers from various villages. ENID experts have visited many agricultural fields in an attempt to know more about the challenges facing farmers for the purposes of setting an informed curriculum⁵.

Livestock Development and Animal Health Caravans:

The ENID Livestock Development and Animal Health Caravans included the following:

- Implement "awareness and information dissemination" workshops in each village to enhance veterinary-animal health and productivity awareness among farmers and rural inhabitants.
- Establish contact points with designated nearby veterinary and extension services.
- Examination of animals by specialized veterinarians.
- Provide needed medicines and vaccination within a package of technical assistance.

Lessons Learned through Planning and Implementation

1. FFS implemented by ENID are considered to be the first of their kind in Qena Governorate. The dedication of small holders to the program, their keenness on attending the sessions, and their active participation in the discussions is a sign of the interest of smallholders in the new techniques being taught and their desire to learn.

⁵ ENID, Sustainable Agricultural Development Programme, "Cased Study for Implemented Farmers Field Schools in Qena", Cairo, October 2014.

2. In implementing FFS it is important to focus on the participation of all farmers throughout the whole process. Discussions during school sessions should give all farmers the chance to express their views rather than being dominated by 1 or 2 participants.
3. A summarized account of the most important issues discussed during the sessions should be made available as a record of the issues under discussion. It is also possible to dedicate some time at the beginning of each session to discuss their experiences within the field after the previous session.
4. It is necessary to keep track of the technical recommendations provided during the sessions and to elaborate on the advantages/disadvantages of following/ignoring them. These recommendations should be disseminated for other field schools to benefit from them. They can serve as guidelines for the governorate's agricultural extension services.
5. Farmers who didn't participate in the field schools should be invited to the fields during harvest season to learn about the recommended practices and witness the effects of adopting them on farming. This will make the project beneficial for a larger group of people. This should also be the day on which the participating farmers receive their certificates of participation/achievement.
6. A results based monitoring system is designed before implementation where specific

III. Recommendations for Up Scaling

Farmer Field Schools proved to be amongst the best means of providing smallholders with an active and participatory learning experience throughout the cultivation season. The expression 'from seed to seed' is of particular relevance here, seeing as the experience offers an opportunity of direct interaction and communication between farmers and agricultural supervisors (extension service providers). It is, therefore, advisable to disseminate the idea of field schools and promote their adoption, especially with regards to the essential crops. If necessary, funding/subsidies can be sought from the relevant donor agencies.

Policy Issues:

- Establishing close cooperation and coordination between scientific research and agricultural extension in identifying research topics, and in field application of research results (quarterly meetings with specific agenda and expected recommendations) and ;
- Modernizing extension systems to be compatible with the recent developments in information and communication, for maximizing the benefits of available extension experiences;
- Laying down an annual implementation plan supported by an appropriate budget;
- Introducing a transparent mechanism for monitoring and evaluating extension activities, with the participation of researchers and farmers;
- Introducing an official integrated system for regulating private sector participation in extension activities under the supervision of a specialized neutral entity;
- Linking incentives granted to extension workers to their achievements; and
- Up scaling FFS should be a cost-effective and integral part of a comprehensive programme for restructuring and improving extension services in Egypt. ENID experience in collaboration with the Directorate of Agriculture in Qena in the implementation of FFS and livestock development caravans need to be up scaled in Qena and other Governorates. ENID succeeded in transforming the limited Animal Health Caravans to a comprehensive livestock development experience through providing simultaneous advice on animal feed and nutrition as well other technical advices related to animal breeding.

Institutional Issues:

- Restructure the agricultural extension service into a service for transferring technology to small farmers, while depending on the participation of the society, and establish an institutional framework for linking agricultural extension with research institutions in and outside the Ministry of Agriculture and Land Reclamation;
- Restructuring the institutional organization on a functional basis, in order to improve performance;
- Maximizing the use of scientific progress in all fields through the establishment of appropriate institutional frameworks;
- Restructure the agricultural extension service into a serve for transferring technology to small farmers, while depending on the participation of the society, and establish an institutional framework for linking agricultural extension with research institutions in and outside the Headquarter of the Ministry of Agriculture and Land Reclamation;
- Enacting a law for regulating the activities of the non-governmental organizations active in the agricultural sector, to ensure flexibility while subjecting their activities to appropriate oversight;
- Merge entities responsible for training and human resources' development in one entity to be responsible for continued training of staff; and
- Establish mechanisms for safeguarding researchers' rights in the returns of their research and development programmes, as well as their Intellectual Property Rights,

Human Capacities Issues:

- Preparing and executing intensive programmes for the training of extension workers in the different specializations needed;
- Establish a system for internal and external training of researchers in the Agricultural Research and Development Centre and the Desert Research Centre, and establish linkages between these centres and other research centres and Egyptian and foreign universities for ensuring the continuous development of research and innovation capabilities;
- The training programmes should stress contemporary issues and priorities including: Applying modern technology to the development of disease- and pest-resistant crop varieties, and climatic and environmental adverse conditions tolerant varieties, as well as reducing the period needed for developing new varieties; and Promoting the productive efficiency of livestock, poultry and fisheries.