



Coordination of the Agricultural Research In the Mediterranean Area

D1.3 COUNTRY REPORT

**Overview on the research system and research programmes
on Mediterranean agriculture**

EGYPT

ARC

Country Focal Point: Ayman ABOU HADID

2010



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BACKGROUND.

Egypt is an intensive user of modern technologies to improve agricultural productivity in view of the natural resource base scarcity and population pressure. With this in mind, the very creation of the Ministry of Agriculture in the beginning of the 20th century was preceded by the establishment of technical divisions and the development of research capabilities.

These endeavors culminated into the creation of the Agricultural Research Center (ARC) in the early 1970s. Over the past two decades, numerous achievements have been realized, including the development of new varieties, improved agronomic practices, livestock development, maintenance of the national herds and better food processing techniques. New crops and animal breeds have also been introduced and research has been dedicated to problem- solving, side by side with basic science.

The overarching goal is to maximize the economic return per unit of land and water. Within the national agricultural development strategies, ARC assumes the following major functions:

- o Conducting applied and basic research to generate a continuous flow of technologies that help increase productivity and reduce production cost;
- o Transfer of new technologies to the farming community through extension service; and monitoring their adoption by the end users; and
- o Human capital development as a continual process.

The Center has so far implemented five 5-year plans and initiated the sixth 5-year plan (2007-2012) in July 2007. According to its Founding Law, ARC is required to develop its infrastructure, set its priorities, train its research personnel and support staff and upgrade its physical capabilities, with a view to achieve greater sustainability. Over the past two decades, ARC research personnel have increased from 1720 researchers in 1982 to 4300 researchers in 2001. New Central Laboratories and Institutes have been added to improve performance in the on-going plan which is built on the following pivotal themes:

- o Sustainable development of research and extension capabilities;
- o Upgrading technology transfer channels; and
- o Utilizing, to the maximum level possible, the findings of science and technology developed abroad.

The sixth 5-year plan incorporates 14 research programs, being implemented by 16 Institutes, 13 Central Labs, 10 regional stations, 36 specific research stations, 21 research administrations throughout Egypt and 4 research, extension and training centers of excellence. This effort is further supported by other partner agencies in MALR, MWRI, universities and sister research centers. Multidisciplinarity is the major feature of the current plan and key to its success. Clearer definition of research topics, geared to solving specific problems, is also another feature, complemented by the set objectives and the physical, human and financial resources earmarked to attain them.

In effect, the questionnaire were distributed to the programme owners which are institutes within the ARC. The ARIMNET database was feeded by the focal point staff using the collected questionnaire. Table 1 lists the institutes which represnt the programme owners.



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TABLE 1: ARC INSTITUTES WHICH REPRESENT THE OWNERS OF PROGRAMMES

Acronym	Full name	Translation in English	Full Address	Web Address	E-mail
PPRI	دهعم تيقو ثوحب ناتابلا	Plant Protection Research Institute (PPRI)	7 Nadi El Seid Street-Dokki-Egypt	ww.arc.sci.eg	ppri@nile-enal.sci.eg
CRI	دهعم ثوحب نطقلا	Cotton Research Institute (CRI)	9 Cairo University St., Giza, Egypt	www.arc.sci.eg	eri_egypt@yahoo.com
RCFF	زكرملا يميلقلا فيذغلال فلاعل أو	Regional Center for Food & Feed (RCFF)	9 Cairo University St, Giza, Egypt	CLFF.intouch.com	Clff@intouch.com
AENRI	دهعم ثوحب تسنهلا تيعارزلا	Agricultural Engineering Research Institute (AERI)	Nadi El-Said St. Dokki- Giza, 12311, Egypt	www.aenri.org	aenri@aenri.org
SCRI	دهعم ثوحب ليصاحملا فيركسلا	Sugar Crops Research Institute (SCRI)	9 El-Gamma St. Giza , Egypt	www.arc.sci.eg	samiamaghraby@arc.sci.eg
AERI	دهعم ثوحب داصتقلا يعارزلا	Agricultural Economics Research Institute Headquarter (AERI)	7 Nadi El-Said Street-Dokki Egypt	www.arc.sci.eg	aeri_84@hotmail.com
HRI	دهعم ثوحب نيباسلا	Horticulture Research Institute (HRI)	9 Gamma Street Giza, 12619 Egypt	hortinst.com	hri@arc.sci.eg
SWERI	دهعم ثوحب يضارلا هايملو تيبيلو	Soils, water and Environment Research. Institute (SWERI)	9 Cairo University St., Giza, Egypt	sweri-eg.com	hekhalfa @ yahoo.com
FCRI	دهعم ثوحب ليصاحملا تيقلا	Field Crops Research Institute (FCRI)	9 Cairo University St., Giza, Egypt	www.arc.sci.eg	fcri@sci.eg
FTRI	دهعم ثوحب ايجولونكت فيذغل أو	Food Technology Research Institute (FTRI)	9 Cairo University St., Giza, Egypt	www.arc.sci.eg	nlftri@Internetegypt.com



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GENERAL ORGANIZATION.

Each research programme consists of sub-programmes, and each sub-programme consists of projects. The projects are funded mainly through a central government agency. Meanwhile the project principal investigators can support his project by external funding that focus on a point within the main project. Table 2 lists programmes by institutes and Table 3 lists the questionnaire response regarding the funding management.

Table 2: Programmes by organization

Organization	Number of programme
SCRI	1 - Sugar Crops
AENRI	1 - Agricultural Engineering
FTRI	1 - Food Technology
PPRI	1 - Plant Protection
SWERI	1 - soiles, Water and Environment
RCFF	1 - Food & Feed
AERI	1 - Agricultural Economics
CRI	1 - Cotton Research
HRI	1 - Horticulture
FCRI	1 - Oil Crops Research Section (OCRS) 2 - Barley crops Research Section (BCRS) 3 - Forage crops Research Section (FCRS) 4 - Rice Crops Research Section (RCRS) 5 - Maize Crops Research Section (RCRS)
Total	14

Table 3: Funding management

PPRI	Full cost model with actual indirect costs
CRI	Full cost model with actual indirect costs
RCFF	Full cost model with actual indirect costs
AENRI	Full cost model with actual indirect costs
SCRI	Full cost model with actual indirect costs
AERI	Full cost model with actual indirect costs
HRI	Full cost model with actual indirect costs
SWERI	Full cost model with actual indirect costs
OCRS	Full cost model with actual indirect costs
BCRS	Full cost model with actual indirect costs
FCRS	Full cost model with actual indirect costs
RCRS	Full cost model with actual indirect costs
MCRS	Full cost model with actual indirect costs
FTRI	Funding of direct costs only, no indirect costs





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MAPPING OF RESEARCH PROGRAMMES.

The programme thematic areas are listed in table 3, mapped to the owners. In Table 4, the activities of the programmes are listed. The programme owners reports to ARC planning unit every 3 month about the technical progress, expenses, and financial data. The report content is organized based on the running projects. The ARC planning unit reports to the ministry planning unit so that the funding can be optimized according the actual situations.

Table 3: Thematic area mapped to an institute or a department within an institute

PPRI	Plant protection, Plant protection equipment
CRI	Cotton ginning
RCFF	Food & Feed Safety
AENRI	Agricultural engineering , Machinery , Bioengineering , Power and Energy, Irrigation
SCRI	Sugar crops
AERI	Economics of production
HRI	Horticultural crops
SWERI	Integrated Field Management Soils, Water, Fertilizers Environ
FCRI	Filed Crops
OCRS	Oil crops
BCRS	Barley crops
FCRS	Forage crops forage production
RCRS	Rice fields Rice soil
MCRS	Maize
FTRI	Technology assessment, Technology evaluation, Technology transfer





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TABLE 4: PROGRAMMES ACTIVITIES

PPRI	Plant protection Plant protection equipment
CRI	Breeding and introducing new cotton varieties that exceed the commercially grown varieties in yield and quality potentials considering the compatibility of these new varieties with the requirements of exports, domestic and international textile industry, to replace they regular commercially grown varieties. Breeding early maturing short season varieties, pest resistant, toterant to environmental stresses as high temperature in the south and salinity in north Delta. To specifying the most suitable agro-climatic zones for each variety with a view to draw the best map of the varieties. Simplifying and transfer of research achievements and technical recommendations to cotton producers and manufacturers . Cotton Production Research , comprising Cotton breeding , varietal conservation, regional evaluation, agronomy and physiology. Cotton Technology Research, comprising cotton yarn ,fiber , chemistry, grading and ginning sections . CRI also has a general department for foundation seeds Ginning.
RCFF	Animal Production Food & Feed Safety & Quality Human Nutrition
AENRI	Introduce the new technology on the filed of Agricultural and Biological Engineering
AERI	Study the efficiency of natural resources used in Agricultural medication and the sole of modern Technsoleajes in Agricultural sector pnavide the most impatient indicators for parlay Mackey
HRI	The goal of HRI is to adopt new and environmentally friendly techniques to increase productivity and improve quality of Horticultural crops



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SWERI	<p>Integrated management of soils, water Fertilizers with respect to environmental aspects. Objectives of Soils Water and Environment National Program:</p> <ul style="list-style-type: none"> * Using modern techniques as remote sensing and GIS to survey available land resources and identifying the promising areas for reclamation. * Use of mathematical models in the field of integrated on-farm management of land and water resources. * Monitoring sources of pollution for soils and water . * Maximize the return from a unit of soil, water and/or fertilizer used in the agricultural production, taking into consideration the environment. <p>Establishment of databases for the available land resources.</p> <ul style="list-style-type: none"> * Prepare the recommendations for optimum use and management of soils, their conservation and improving their productivity . * Dissemination of the developed technologies for the integrated soil and water management in cooperation With the extension sector. * Increasing the production of bio and organic-fertilizers and their use in agricultural production. * Cooperation with local, regional and international institutions in the areas of applied research.
FCRI	
O CRS	<p>Develop oil crops production Increase farmers income (net resturn) Increase self sufficient of oil and cake</p>
B CRS	<ul style="list-style-type: none"> -Relapse high yielding barley cv., resistant to biotic. a biotic stress, to lerant to drought and salinity. -select the suitable Agriculture treat., for every descript -Transfer the new package to the farmers -Multiplication of the new barley Cv.
F CRS	<p>Developing new life varieties high quality</p>



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RCRS	<p>Enhancing rice production by:</p> <ol style="list-style-type: none"> 1 - Developing new line varieties for overcoming all rice production impediments. 2- Releasing proper rice recommendation package. 3- Dissemination new rice technology. <ol style="list-style-type: none"> 1. Study the optimum cultural practices for the newly developed varieties. 2. Studying fertilizer requirements (N, Ph, Zn and K) 3. Improving the productivity of direct and broadcasting seeded rice. 4. Re-evolution of the package of recommendation for rice. 5. Studying the optimum cultural practices for mechanical transplanting 6. Studying fertilizer management for sales~ soils. 7. Studying the micronutnent requirements. 8. Studying producing\rice without fertilizers. 9. Utilization of biological fertilizers in rice. 10. Estimation water requirements office. 11. Studying fertilizer use efficiency especially Zn and phosphorus by using labeled elements.
MCRS	<p>Developing new Superior hybrids</p>
	<p>Resistant to major diseases New technology transfer</p> <ol style="list-style-type: none"> 1 Improve both yield and resistance to major pests, primarily, late wilt and downy mildew diseases, as well as, corn borers. 2 Developing new high yielding yellow and white hybrids (three-way and single cross hybrids). 3 Produce breeder and foundation seed of released new single and three-way crosses. 4 Breed for drought and heat tolerance to drive new inbreds tolerant under such stress conditions" . 5 Create suitable recommendations for old and new lands, especially Toshky and El-Ewinat. 6 Establish a demonstration and observation fields over 21 governorates for new registered hybrids through the Technology Transfer Program to acquaint farmers with these hybrids as well as new recommended agronomic practices. 7 Release the National Maize Campaign to cover all maize producing areas in Egypt with concentration on the expanding of growing yellow maize hybrids. 8 Study the socio-economic factors affecting farmer\'s adoption to new technology (especially new hybrids) through the on-farm research and field questionnaires.



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FTRI

- Solve Problems
- Add new Products
- Development Products



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