

# Chapter 9: Technical Infrastructure



## [9.1 Overview of Governmental Scientific Research institutions and Laboratory Infrastructure Concerning Environmental Monitoring in Egypt.](#)

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### ***9.1 Overview of Governmental Scientific Research institutions and Laboratory Infrastructure Concerning Environmental Monitoring in Egypt.***

The aim of this chapter is to provide an overview of the available technical infrastructure in Egypt at the national level concerning chemicals management, laboratory facilities, computer capabilities and technical training and the available education programmers, with high strengths capacity. Furthermore, these technical infrastructures can be applied to POPs management actions are identified in this chapter.

#### ***First: Ministry of State for Scientific Research related institutes:***

#### **Name of Organization: (1) Academy of Scientific Research and Technology**

Ministry : Ministry of State for Scientific Research  
Address : 101 Kasr El-Aini Str., Cairo  
Tel. : 7921286- 7921287  
Fax : 7921270  
Head of Institute : Prof. Dr. Fawzy Abdel Kader El –Refai

#### **Main Responsibilities**

- Promoting the progress of science and technology.
- Strengthening linkages between S&T bodies.
- Integrating the S&T with the fabric of the Egyptian society.

#### ***Types of Activities***

Sectorial Research Projects - Technology Development - Local and Regional Development - Fostering the Infrastructure of Scientific and Technological Research - Scientific and Technological Services Popularization of Science and Technology - International Cooperation in Science and Technology

### ***Major Functions***

- To support scientific research directed towards solving problems of national interest or priority,
- To encourage the application of modern technology in areas included in the national programs of economic and social development,
- To formulate policies that ensure strong linkages at the national level between scientific and technological organizations, within the framework of the principal trends of the scientific and technological research which serve the national development plans,
- To coordinate the major research projects affecting the national economic and social plans,
- To participate in the study of the scientific and technological aspects of the major development projects and when necessary, recommend the establishment of new research institutes,
- To encourage basic research as a means of training and developing human research resources, and to support research units working in modern fields of science.
- To disseminate information concerning the potentialities of international modern technologies,
- To participate in the development of science curricula,
- To organize scientific publishing and the popularization of science,
- To increase excellency through different venues of motivation,
- To support scientific societies and encourage and participate, in convening scientific conferences, and
- To develop international relations in the fields of science and technology

### **Main Achievements**

- Augmenting the S&T infrastructure.
- Supporting basic and applied scientific research.
- Enhancing end- users oriented research.
- Technology development.
- Fostering local and regional development.

- Contributing to science and technology services.
- Popularization of S&T culture.
- Fostering international cooperation in science and technology

**012 Name of Institution: ( 2) National Research Center**

Ministry : Ministry of Scientific Research  
 Address : Tahrir Street - Dokki - Cairo  
 Tel : 3371828/3371211  
 Fax : 3370931 - 3601877  
 Head of Institution : Prof. Dr.Nabil Abd EI-Megid Saleh  
 Starting Date : : 1956

**Introduction:**

The NRC is by far the largest multi-disciplinary R & D center devoted to both basic and applied research within the major fields of interest. The NRC is headed by a President with a ministerial status and is assisted by two Vice Presidents, one for research and the second for technical affairs. The NRC is governed by a board of directors headed by the president of the NRC. Board members are the two vice president, five experienced members in scientific affairs appointed by the Minister of State for Scientific Research should he/her attend. The following institutes developed from departments at the NRC to separate institutes: Petroleum Research Institute, Theodore Bilharz Reassert Institute, Central Metallurgical Research Institute, Ophthalmology Institute and Electronics Research Institute. Since its establishment in 1956, the NRC passed through 3 stages: The first stage, 1956 - 1968, concentrated on basic sciences and staff development. The second stage, 1968 - 1973, was characterized by a growing interaction with the production and services sector. The customer oriented research, 1973 to the present, features plans for research activity that serves specific needs of the end users.

**The NRC consists of the following 13-research division including 62 departments:**

*1. Pharmaceutical Industries:*

Pharmaceuticals, Therapeutical Chemistry, Natural and Microbial Products.

*2. Chemical Industries:*

Paper and Cellulose, Taining. Materials and Protein Chemistry, Polymers and

Pigments, Chemistry of Pesticides, Glass, Refractories, Building Materials and Ceramics.

*3. Textile Industries:*

Dyeing, Printing and Textile Auxiliaries, Spinning and Weaving, Pretreatment and Finishing of Cellulosic Fibers, Protein and Synthetic Fibers.

*4. Food Industries and Nutrition:*

Food Technology and Dairing, Fats and oils, Food Science and Nutrition.

*5. Genetic Engineering and Biotechnology:*

Cellular Biology, Human Genetics, Molecular Biology, Plant Cell and Tissue Culture, Microbial Biotechnology, Microbial Genetics.

*6. Engineering:*

Mechanical Engineering, Solar Energy, Chemical Engineering and Pilot Plant, Information and Systems.

*7. Applied Organic Chemistry:*

Organic Chemistry, Biochemistry, Chemistry of Flavoring Agents Related Substances.

*8. Applied Inorganic Chemistry:*

Physical Chemistry, Inorganic Chemistry.

*9. Medical Sciences:*

Basic Medical Sciences, Pharmacology, Child Health, Community Medicine, Hormones, Clinical Medical Sciences.

*10. Environmental Sciences:*

Water Pollution, Air Pollution, Occupational Health and Industrial Medicine.

*11. Physics:*

Solid State, Spectroscopy, Microwave, Theoretical Physics, Electron Microscopy and Thin Films, Advanced Materials.

*12. Basic Sciences:*

Microbial Chemistry, Cytology and Genetics, Earth Sciences, Photochemistry, Plant Systematic and Egyptian Flora.

*13. Agriculture and Biology;*

Botany, Pest and Plant Protection, Soil and water Use, Animal Production, Animal and Poultry Nutrition, Parasites and Animal Diseases, Agricultural Economy, Plant Diseases, Agricultural Microbiology, Fields Crops, Horticulture.

**Research and Development Projects Office.**

1. Focal point for in-house projects, starting from applications, evaluation through specialized committees and monitoring.
2. Evaluation of applied projects with promising end-users in collaboration with marketing and feasibility Studies Office, for application.
3. Consultancy informing research teams in areas of multidisciplinary projects for local and foreign end-users.
4. Monitoring local and International research projects. .
5. Focal point for applications for M.Sc. and Ph.D. degrees.

**The Marketing and Feasibility Studies Office.**

1. Identifying the needs of the local market for services and new products.
2. Marketing of all services offered by the NRC.
3. Feasibility studies for promising applied projects before marketing.
4. Consultancy for marketing, Feasibility studies and preparing patents.

**The International Relations Office.**

1. Identifying priorities, in accordance with the NRC policy, as a guide for bilateral agreements.
2. Consultancy and 'coordination of activities for research projects with principal investigators and international funding agencies.
3. Establishment of a Data Base of International Opportunities such as research and training grants.

**The Information Center.**

1. Establishing a Data Base for researchers, research publications, final projects reports, M.Sc. and Ph.D. theses.
2. Issuing booklets on research departments, scientific bulletin, newsletter, collective volumes on publications, M.Sc. and Ph.D. theses and annual report.
3. Supervision of reports to mass media.

**The Central Secretarial Office.**

1. Assisting the R&D management offices in performing their responsibilities (secretarial, book keeping, filing and presentations).
2. It is planned that special calipers of the secretarial staff will be trained to help in the technical assignments of the offices.

**Services Conducted.**

*A- Services Conducted Through Research and Development and Technology*

*Transfer projects.. R&D and TT projects are carried out according to their different*

financial sources. The main users of this kind of the R&D and TT projects activity, are the industrial, agricultural, environmental and medical sectors represented in:

- a. Large governmental and public sector enterprises.
- b. Private sector, medium and small enterprises.

They can be enumerated as follows:

### ***1. In-House Research Contracts.***

In-house research projects are those projects, which fall within major program areas as determined by NRC Top Management and the governing body of the NRC. These projects are financed from the NRC governmental budget. In recent years, the NRC is trying to get the users involved in this kind of R&D activity. A new three years research projects plan started in July 1995. It includes the so-called priority projects, which are tailored to satisfy the needs of specific end users or clients themselves who are encouraged to participate in the projects' implementation.

### ***2. Local Contracts.***

2.1 These are R&D contracts and agreements between the NRC and the ASRT : This kind of activity started in the NRC in 1973 to either strengthen R&D capabilities at the NRC; or they are devoted to assist production and service sector, mainly big industries in public sector.

2.2 Contracts with various public and private industrial, commercial, and service enterprises in Egypt. These projects are primarily financed by . the clients, and thus designed to fulfill their needs.

### ***3- Foreign Contracts***

3.1 These are contracts and agreements with foreign agencies such as United States Environmental Protection Agency (EP A), German Agency for Technical Cooperation (GTZ), USAID, WHO ...etc. Within these contracts, joint research work is implemented by the NRC various research teams together with equivalent researchers from different parts of the world, mainly in developed countries. These projects are further subdivided into two categories, the nature of the first is to strengthen the NRC capabilities and carry out research, while the second is to assist the NRC to collaborate with end users.

3.2 These are contracts with the Egyptian-US program, science and technology corporation (STC). This program is entirely designed to establish working relations

between Egyptian R.&D institutions and their industrial clients.

3.3 These are contracts with foreign clients and / or customers in which R&D and TT services are offered against full payment. This type of activity is considered very promising and needs further exploration and exploitation. To encourage this type of activity, contracts were signed with the University of Jordan and the Agricultural Research Council of South Africa to implement projects in the region of Africa.

### ***B- Training***

The training center affiliated to NRC organizes an annual program of training courses in various scientific and technological areas and at different levels. The program is mainly concerned with the transfer of specially tailored experience to those who work in sectors of industry, production and services in Egypt, Arab world and African continent. The experience attained by those trainees is essentially as a basis to keep up with the fast moving developments of science. Joint training courses with foreign and international organization are often organized in some areas. R&D management training courses are offered as well to researchers and administrators in universities, ministries and public sectors.

### **C- General Services**

NRC has 14 units with specialized status, the activity of which serve production and service sectors. They operate as special units, with a separate financial system. These are:

1. Central analytical and services laboratory.
2. Textile industries.
3. Chemical and pharmaceutical industries.
4. Food and dairy industry.
5. Medical services.
6. Consultations and Engineering developments.
7. Agricultural experimental research stations.
8. Agricultural services and consultations.
9. Technical services.
10. Consultant unit for wastewater management and environmental studies.
11. Aquatic environmental consultation unit.
12. Consultant unit for air pollution.

13. Occupational health and industrial medicine consultations.

14. Technical consultancy and project development.

(3) Mubarak City for Scientific Research & Technological Applications (parts Under Construction)

**Objectives.**

- Development of modern technologies.
- Establishment of technology development units.
- Training on modern technologies.
- Cooperation with national and international organizations in the field of technology transfer.

**Institutions**

1- Genetic Engineering and Biotechnology Research Institute.

2- Informatics Research Institute.

**Technology Centers**

- Center for Development of Scientific and Technological Abilities.
- Center for Development of Small Industries.
- Center for Development of Engineering Industries.
- Center for Development of Pharmaceutical and Fermentation Industries.

Name of the institution: (4) Genetic Engineering and Biotechnology research Institute

- Ministry: Ministry of Scientific Research
- Address: New Borg AI Arab, Alexandria
- . Tel: ( 03 ) 4341367,4341368,4322251
- Fax: ( 03 ) 4341365
- Head of Institution: Hassan Moawad Abdela'al
- Starting Date: 1/7/1997

**Main Responsibility**

- GEBRI will be a leader in modern biotechnology' applications of undisputed value to' the advancement of genetic engineering and biotechnology by national, regional and international standards.

**Major Fields**

- Protein Research, Nucleic Acid Research, Biomedical Research,

Bioremediation Research and Biotechnology Product Development Programs,

### **Facilities**

- GEBRI is pyramid shape structure with 14 standard Molecular biology Laboratories and several central service laboratories. GEBRI also includes mammalian cell culture and multipurpose pilot plant. All labs are equipped with the up-to-date equipments necessary for serving the major field of GEBRI research plan.

### **Future plans**

- In the next five-year GEBRI will be involved in a diversity of R&D projects addressing specific problems related to the institute major fields in the area of advanced biotechnology.

### **Foreign Cooperation**

- To strengthen the relation with international research institutions GEBRI already has international collaboration with the following institutions: Georgia State University, and University of Tennessee, USA. Several other universities in Germany are hosting 13 Ph.D. graduate students through German exchange program (DAAD). Three Egyptian expatriates with outstanding world experience in biotechnology were appointed as adjunct professors at GEBRI they are working closely with the Egyptian staff at GEBRI to put the solid foundation for establishing a center of excellence in
- Biotechnology by world standards. Through their help several GEBRI staff and graduate students are offered high quality training genetic engineering and biotechnology.

### **Main Expertise**

- Production of the thermostable alkaline protease.
- Cloning of Taq DNA polymerase gene and production of strain suitable for bioprocessing technology.
- Overproduction of alpha- amylase using Genetically modified *Pseudomonas* spp.
- Production of DNA modifying enzymes. .
- Production of gluconic acid from lactose by genetically modified

Gluconohacter oxidants.

- Bioprocess cultivation of aerobic microorganisms in airlift bioreactor for large- scale production of valuable proteins. .
- Design and performance of the whole immobilized fluidized bed bioreactor for the production of valuable protein. .
- Production of a high molecular-weight extracellular xanthan gum. .
- Using microorganisms for recovery of the metals' and pollutants degradation from the environment.
- Characterization and studying the regulatory mechanism and molecular genetic basis underlying the bacterial resistance to heavy metals. .
- Molecular bases of the biology of stress tolerance. .
- Design of biological systems from aquatic plants and their associative bacteria for bioremediation of environmental pollutants.
- Improving nitrogen fixation using genetically modified rhizobia.
- Development of serological and molecular techniques for early virus detection in sugar beat.
- DNA fingerprinting of Egyptian cotton varieties.
- Isolation, cloning and sequencing of lignin degradation gene.
- Isolation and manipulation of salt tolerant genes for different uses.
- Application of the molecular technique to design recombinant antigens for production of virus detection kits for Rubella virus.
- Production of medical diagnostic kits for prevalent diseases.
- Study the rheumatic heart disease (RHD) factors and devising protocols to interrupt and/or prevent these factors.

*Name of the institution:( 5 ) national Institute for Oceanography and Fisheries*

Ministry: Ministry of Scientific Research

Address: 101 Kasr EI Einy St. Cairo

Tel: 3556785

Fax : 3551381

Head of Institution: Prof. Dr. Bussien Kamel Badawy

Starting Date: 1920

## **Main Responsibility**

- Conservation of the marine environment and its living and non living resources and its preservation and development as an environment suitable for marine living organisms
- Development of aquaculture.

## Types of Activities

Research and Consultancy.

## Major Fields

Biological - Environmental - Genetic Engineering.

## Facilities

Laboratories - Measurement instruments - Water Station

## Future Plans

-Research development in order to cope with modern research trends especially in the Genetic Engineering and Cellular Science.

-Widening the scientific cooperation scale with foreign organizations. -Working in specific. Subjects that have their influence on development (Reuse of River Nile water, expansion in the research concerning aquaculture and hatching...etc.).

## **Main specializations:**

Biology of Fisheries - Marine Chemistry - Oceanography - Marine Invertebrates - Hydrobiology - Aquaculture Octology - Liminology - Geology - Artificial Hatching - Pollution Control.

## **Foreign Cooperation**

Conferences, seminars abroad, joint research work and joint research Cruises.

## **Main Expertise**

- Pollution of marine environment.
- Developing aquaculture.
- Preservation of coasts and combating gelly fish.
- Reuse of wastewater in irrigation and aquaculture.
- Studying Egyptian resource of living marine wealth.
- Proposing laws that organize the marine environment protection.

- Preparing the required studies to develop the aquaculture.
- Giving technical advise for different research and commercial projects. .  
Follow up with the international scientific progress and transferring what serves the development of aquaculture in Egypt.
- Possibility of using the severe saline seawater in cultivating some types of plants.
- Participation in spreading scientific culture in the fields of the activities of the institute.

*Name of the institution:( 6 ) Egyptian Petroleum Research Institute*

Ministry of Scientific Research

Address: Ahmed Ramez Street - 8th Sector. Nasr , City - Cairo

Tel: 2747847 - 2747917

Fax: 2747433

Head of Institution Starting Date: Prof. Dr. Mohamed Farouk Ezzat.

Starting date: 1976

#### **Main Responsibility**

- Technical and Applied studies and research in the different petroleum fields.
- Consultancy for the petroleum sector.
- Analysis and services for petroleum sector.
- Production of specialized chemicals for drilling & refining.

#### **Type of Activities**

Research and Development - Engineering Design - Technoeconomical Studies - Consultancy" -Training - Tests - Analyses and Small Scale Production.

**Major Fields** Exploration - Production - Refining - Petrochemicals - Pollution Fighting Quality Assurance - Energy Conservation.

#### **Facilities**

Statistics Unit - Library - Specialized Centers in the fields of services for petroleum tanks, production, asphalt and other materials preparation Measuring Instruments.

#### **Future plans**

- Replacement of the instruments for evaluation and analysis of petroleum and natural gases.

- Sending delegations abroad to help transfer advanced technologies to Egypt. .
- Developing some of the instruments and equipment in the labs.
- Developing the oil production department with all of its specializations.
- Expand in building of advanced services centers.

### **Main Specializations**

Oil production, petrochemical, oil analysis and evaluation.

### **Foreign Cooperation**

Cooperation with France, Russia, Korea, Poland, and Mexico - Germany U.K- USA is amongst others.

### **Main Expertise**

Exploration - Production - Analysis and Evaluation - Refining - Petroleum application - Petrochemicals - Operations Development – Energy Conservation - New and Renewable Energy.

Pollution Control - Producing chemicals required for petroleum sector services.

*Name of the institution:( 7 ) National Institute for standards*

Ministry: Ministry of Scientific Research

Address: Tersa St. - Haram - Giza

Tel: 3867451

Fax: 3867451

Head of Institution: Prof. Dr. Mohamed EI Fikki

Starting Date: 1963

### **Main Responsibility:**

The institute is the official reference of the National standards for physical measurement equipment.

### **Types of Activities**

Research - Technological Development - Consultancy\_ - Training Tests and Measurements - Quality Assurance.

### **Major Fields**

Industrial - Construction - and Physical Measurements.

## **Facilities**

- Information center- Statistics Unit.
- Textile Lab- Safety Testing Lab- Ultrasonic Lab – Optical Measurements Lab  
Mechanical Measurements Lab - Photometry Lab Rubber Testing Lab-  
Radiation Measurement Lab- Power Measurement and Material Testing Lab -  
Time Measurement and Frequency Lab, Thermometry lab.- Mass lab.-  
Acoustic lab.

## **Future Plans**

- It is expected that the institute will be the head of a national system for quality assurances and increasing the productivity.
- Expanding the service scale for consultancy, training and standardization.

## **Foreign Cooperation:**

The institute has relations with similar institutes in many foreign countries such as Germany - France. Italy and the United States. This cooperation is funded by many organizations such as the African Development Bank.

## **Main Expertise:**

- Conceiving and constructing primary standards for measurement.
- Control of measuring equipment in industry and services.
- Representing Egypt in international agreements in the fields of measurement and standardization.

*Name of the institution : (8) National Authority for remote sensing & space science (NARSS).*

Ministry: Ministry of Scientific Research.

Address: 23 Joussef Street, Prostito, EI-Nozha EI-Gedida- Cairo.

Tel: 2964387/2964386.

Fax: 2964385

Head of Institution: Prof. Dr. Mohamed Adel Yehia

Starting Date: 1971

## **Main Responsibility**

- Aerial photography and using satellite imagery.
- Conducting studies for surveying and management of natural resources.
- Training of specialists.

- Proposing pertinent laws.

**Types of Activities:**

Research - Technology Development - Consultancies - Training - Tests, Laboratory Analyses and Measurements - Information systems.

**Major Fields:**

Exploring and managing natural resources.

**Future Plans**

- Construction of a satellite and satellite receiving station.
- Expanding services & Training.

**Main Specializations**

Geology - Engineering - Agriculture -Chemistry.

**Foreign Cooperation:**

The authority has many scientific relations with international authorities and institutes.

**Main Expertise**

- Scanning & Monitoring natural resources, agricultural resources, pollution and construction development.
- Monitoring of natural disasters.
- Training
- Processing and interpretation of remotely sensed data and geographic Information system

*Name of the institution: (9) Central Metallurgical Research & Development Institute (CMRDI)*

Ministry Address: Ministry of Scientific Research

Address: P.O.Box 87 - Helwan

Tel.: 5010640/1/2/3 - 5010094/5

Fax : 5010639

Head of Institution: Prof. Dr. Adel A. Nofal

Starting Date: 1984

**Mission:**

- To participate in the national economic growth by enhancing material

competitiveness in the industrial sector. To fulfill this mission, the institute will keep abreast of technological development.

**Goals:**

The improvement of the quality of products and processes or the development of new products and new processes.

**Types of Activities:**

- Optimum exploitation of indigenous ores to replace imported materials.
- Technology transfer in the fields of mineral processing and metallurgy.
- Development of materials and processes through pilot plant runs and prototype units.
- Improvement of products quality and reducing production costs.
- Troubleshooting and solving technical problems.
- Preliminary techno-economic feasibility studies.
- Technical consultancy, testing, laboratory analysis and measurements.
- Training engineers of industrial institutions in modern metallurgical technologies on local and regional basis.

**Major Fields:**

Ore evaluation - Ore dressing - Hydrometallurgy - Pyrometallurgy - Electrometallurgy - Iron making - Steel making & Ferroalloys - Industrial wastes ' . Melting & Casting- Heat treatment - Steel alloy - Non-Ferrous alloys - Corrosion. Metal protection and coating- metal forming- Powder metallurgy- Welding technology- Non-destructive testing - Consumable materials in welding.

**Future Plans**

Process design & engineering - Material testing and central services Simulation and mathematical moulding - Techno- Information center for metallurgical industries- Technology incubators- Marketing of Research products – Development of international scientific relations.

**Main Specializations:**

- Ore evaluation and beneficiation - Extractive metallurgy - Metal forming - Welding.

**Foreign Cooperation:**

CMRDI maintains good relations with international research and technology organizations as well as funding organizations in many countries such as Japan, USA,

Sweden, the Netherland, U.K., Canada, Germany, France, etc.

*Name of the institution: (10) The Technical & Technological Consulting, Studies & Research fund.*

Ministry Address: Ministry of State for Scientific Research

Address: 101 Kasr EI Aini St. - Cairo

Tel: 5941282 - 5941283

Fax: 5941280

Head of Institution: Prof. Dr. Mofid Shehab - Minister and Chair of the board.

Starting Date: 1988

### **Vision**

The Technical and Technological Consulting, Studies and Research Fund (TTCSRFF) - known hereinafter as the "Fund" - will be a recognized leading multifaceted consulting institution in Egypt. It will excel in providing quality technical and technological services backed by the strength of the national S&T system. It will be an instrumental mechanism in contributing to building up the local technological capabilities through availing practical opportunities for training and on-the-job practice. Fund niches will encompass working linkages between the S&T community and its end-users, commercialization of R&D results, technology transfer, feasibility studies, environmental impact assessment and engineering.

### **The Need & Mission**

A technical liaison and extension mechanism was deemed necessary to strengthen linkages between the national R&D system and its end-users in the production and service sectors. Such a mechanism would constitute a viable intermediary in service of both supply and demand of the S&T system, thus satisfying a very perceptible need.

The technical and technological consulting studies and research fund (TTCSRFF) was accordingly designed and established in 1988 to fulfill this mandate. It is a general S&T - based consulting and extension institutions that aims at solving technical problems, provides feasibility and technical studies, and technological services for clients on a contract basis.

## **Main Responsibility, and Approach**

To solve problems and provide technological services for clients on contractual basis. It is a self-funded multifaceted technical, financial and managerial system that undertakes diagnosis and formulation of client problems and needs in terms of clearly-defined projects; recruits and organizes the necessary manpower and facilities from its own core staff, as well as from the national pool of science and technology expertise (further, resort can be made to specialized foreign skills whenever needed to fill specific gaps) and closely controls progress of work toward completion and fulfillment of desired ends.

### **Types of Activities**

- Consulting and extension services
- Market research
- Pre-investment studies
- Project evaluation
- Technology assessment and selection
- Environmental Impact Assessment Engineering
- Development of technology packages
- Environmental systems
- Safety and loss prevention schemes
- Training

### **Main Specializations:**

Engineering - and Economics

### **Foreign. Cooperation:**

Some initial contracts and memoranda of understanding, signed with a number of foreign technical and consulting organization

### **Main Expertise:**

1. Consultancy (multifaceted).
2. Pre-investment techno-economic studies.
3. Environmental impact assessment Environmental Technologies
4. Engineering Design, and full project management.

### **Sample Achievement:**

- Local Design and Manufacture of:  
-Two full-scale compost plants, 10 others are on the way.

- Hospital waste incinerators.
- Reverse osmosis desalination plant.
- A number of prototype units in the field of water and wastewater treatment systems.
- Sanitary sewage and compost systems for rural areas.

### **Technical Studies**

- Over 40 environmental audits and industrial wastewater management studies.
- A large number of solid waste management studies
- Several techno-economic feasibility studies.
- A number of full-fledged environmental impact and risk assessment studies.

### **Future Plans:**

- Enhanced development through technological services, transfer and application of best of "shelf" know-how and practices.
- Focusing on and excelling in:
  1. Feasibility studies, Environmental Impact Assessment, Design; Environmental technologies; Transfer and acquisition of technology.
  2. Establishment of out reaches extension units, technology incubators and technological improvement & innovation network.

### **Second: Ministry Of Agricultural and Land Reclamation**

*Name of the institution: (1) The Central Laboratory of Residue Analysis of Pesticides and Heavy Metals in Food.*

The Laboratory is the main output of the project "Quality Control of Agricultural Products" The project is a model for successful Collaboration Between Finland "Ministry of foreign Affairs" and Egypt "Ministry of Agriculture" The Central Laboratory of Residue Analysis of Pesticides and Heavy Metals in Food was established in 1995 according to the Ministerial Decree no. 680 in year 1995. As the official laboratory of the Ministry of Agriculture in its field of analysis. The central Laboratory of Residue Analysis of Pesticides and Heavy Metals in Food is only the Accredited Laboratory in Egypt since 1996 on all its analysis.

The Laboratory got its Accreditation Certificate from the Finnish branch (FINAS) of the European Accreditation Center of Laboratories (EAL) on basis of ISO 17025.

Address: 7 Nabil El- Said St, Dokki, Giza EGYPT.

Telephone : (202) 7601395 – ( 202 ) 7611355

Fax: (202 ) 7611216 – ( 202 ) 7611106.

Email: [qcap@intouch.com](mailto:qcap@intouch.com)

Head of the Lab.: Prof. Dr. Mohamed El- Elamy

- **The Laboratory Activities:**

- 1- Analysis of Chemical and biological contaminants:
  - \* Pesticide Residues (89 pesticides)
  - \* Heavy Metals; mercury, Cadmium, Copper, Lead & Tin
  - \* Aflatoxins
  - \* Dioxins and PCBs
  - \* 16 microbes hazardous to the human health
  - \* Nitrates
- 2- Analyzing Samples from shipments of agricultural products prior to export and issuing Accredited Certificates with Results.
- 3- Analyzing samples from certain imported food & agriculture products in order to prevent food not complying with the standards of contaminants to enter the country for consumption.
- 4- Monitoring status of chemical and biological contamination in food and agriculture production the local markets through the national Monitoring Program in the laboratory.
- 5- Collaboration with the different research institutes in the national sectors i.e. Environment, Irrigation, Health, Universities, Agricultural Research Projects, Organic Agriculture, and International Inspection Offices, Export and Import companies, Farmers and Consumers.
- 6- Implementation & participating in Training Programs on Analysis and sampling methods nationally and internationally where a training center is established in the lab. To hold those programs.
- 7- Risk assessment on pesticides in residues is studied in the laboratory under authorization of the Ministerial decree no. 663 for years 1998.
- 8- Development of the methods of analysis of the laboratory and renovating new methods for new contaminants.

- 9- Training programs for colleagues from Arab countries in the Region on the sampling and analysis methods adopted in the laboratory.
- 10- Training of the Inspectors from plant Quarantine on the methods of the sampling.
- 11- Expanding the scope and the number of chemical and biological contaminants analyzed in the Laboratory and adding new methods to be proposed for accreditation.

*Name of the institution: (2 ) Horticulture Research Institute HRI.*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 9 EI Gamaa St., Orman – Giza

Tel: 5720617

Fax: 5721628

Head of Institution: Dr. Khalifa Attiya Okasha

Starting Date: 1911

### **Main Responsibility**

Horticulture and field production improvement

### **Types of Activities**

Research - Training - Laboratories Experiments and Extension Service Laboratory Analysis.

### **Major Fields**

- Horticulture improvement: Fruits - Vegetables - Medicinal and Aromatic Plants - Ornaments and Forestry.
- Extension services.
- Training programs
- Production of sapling, seeds and cuttings.

### **Facilities**

- Chemical Laboratories.
- Various equipment.
- Measurement of fruit quality.

### **Future Plans**

- Continuing development and improvement of horticulture to meet the local

market needs and exportation.

- Introducing recent technologies.
- Design breeding programs to produce resistant varieties.
- Establishment of a genes bank.

### **Main Specializations**

Fruit - Vegetable - Aromatic Plants- Medicinal Plants - Land – Forestry and Flora.

### **Foreign Cooperation**

- Potato and sweet potato seed production in cooperation with Holland.
- California University.
- High quality seed production project with Japan.
- Nontraditional horticulture projects with FAO
- United States Agency for International Development USAID.

### **Main Expertise**

- Improvement of horticulture.
- Seed production, sapling and cutting
- Extension services.
- Training programs.

*Name of the institution: (3) Plant Protection Research Institute.*

Ministry: Ministry of Agricultural and Land Reclamation

Address: 7, Elseid Club Street, Dokki, Cairo

Tel: 3372193, 3486163

Fax: 716176 - 716175

Head of Institution: Prof. Dr. Galal Mahmoud Moawad .

Starting Date: 1983

### **Main Responsibility**

- Plant protection from harmful animals, pets and their control.
- Beekeeping establishment - rearing different kinds of bees and control their pests.
- Silkworm rearing and cocoon production.

### **Types of activities**

- Studies and research on agricultural pests and their control.

- Cotton, field, horticulture, vegetables, medical and aromatic plants, pests and acarine.
- Useful insects as bees, silkworms, parasites and harmful animals and insects.
- Survey and classification of pests and spray technology.

### **Major Fields**

Research - Technical and economical studies on agricultural pests, consultations, training and infestation predictions.

### **Facilities**

Laboratories - Statistical Unit - Library - Computer unit and extension unit.

### **Future Plans**

- Following-up the technological development of other countries in the Protection Field, this involves developing the control strategies improving applications of techniques.
- Studying local problems of field pests and the suitable methods control.
- Conducting training and extension services.

### **Main Specializations:**

Entomology - Insecticides - plant protection

### **Foreign Cooperation:**

- British Overseas Science Institute.
- American Universities.
- United States Agency for International Development (USAID)/NARP.
- European Union (EU).
- The German agency for technical cooperation (Gesellschaft for technische Zusammenarbeit ) (GTZ).

### **Main Expertise**

- Information prediction of agricultural pests.
- Extension services for plant protection.
- Integrated pest management.
- Beekeeping establishment and combating bee diseases.
- Silkworm rearing.

*Name of the institution: (4 ) Field Crop Research Institute.*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 9 El Gamaa St. Giza - Cairo

Tel: 5726127

Fax: 5738425

Head Of Institute: Dr. Rashad Ahmed Abu EI Enien

Starting Date: 1903

**Main Responsibility**

- Selection and breeding of high production varieties of field crops resistant to pests and unsuitable conditions in the reclaimed lands.
- Seed production.

**Types of Activities:**

Research - Consultations- Training - Analyses.

**Major Field:**

*Seed Production*

**Main Specializations:**

Crops - Chemistry - Genetics - Horticulture - Physiology - Plant breeding 'mal production - Plant Pathology - Insecticides-Agricultural production-Entomology Microbiology- Agricultural Science - Agriculture Mechanization - Agriculture Extension - Economy - Food Processing.

**Main Expertise**

- Improvement of Agricultural Production.
- Determination of suitable crops and hybrids for different soils
- Determination of the Agricultural cycles suitable for weather and soils.
- Breeding and production of field crops.

*Name of the institution: (5 ) Soil, Water and Environmental Research Institute.*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 9 Gamaa St. 12619, Giza, Egypt

Tel: 5720608 - 5725549

Fax: 5720608

Head of Institution: Dr. Nabil Mohamed El Mowelhi

Starting Date: 1903

**Main Responsibility:**

The SWRI is responsible for basic and applied research projects, aimed at the conservation and improvement of Egypt's soil and resources.

**Types of Activities**

Research- Service Activities and Technology - Design and Training.

**Major Fields**

Environment - Irrigation and Drainage- Plant Nutrition and Soil Fertility.

Documentation and Information - Remote Sensing.

**Facilities**

- Laboratories and specialized equipment.
- General Chemical laboratory
- Computer Unit.
- Specialized Biogas laboratory
- Library

**Future Plans**

- Design and evaluation of various irrigation and drainage networks.
- Soil Fertility and Fertilizer requirements.
- Extending activities on the recycling and bioconversion of agricultural wastes in the form of energy.

**Main Specializations**

Sandy and Calcareous soils - Field Drainage-Environment-Soil Physics and Chemistry - Agricultural Microbiology - Saline and alkaline Soils -Improvement and Conservation. of Cultivated Soils - Soil Fertility and Plant Nutrition Water Requirements and Field Irrigation - Soil Survey and Classification.

**Foreign Cooperation**

- Canada International Development Agency (CIDA) .
- The European Economic Community (EEC)
- The Food and Agriculture Organization (FAO)

- The Japan International Cooperative Association JICA.
- The USAID.

### **Main Expertise**

- Conservation and improvement of Egypt's soil and water resources.
- Sensing maps.
- Helping formulate agricultural policy.

*Name of the institution: (6) Agriculture Extension and Rural Development Research Institute.*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 8 El Gamaa St., Giza

Tel: 5716301 - 5716302

Fax: 5716303

Head of Institution: Dr. Mohamed Shafie Sallam

Starting Date: 1977

### **Main Responsibility**

To develop the Agricultural Extension Services, Considered to be the cornerstone for promoting agricultural productivity.

### **Types of Activities**

Research - Training - Publications.

### **Major Fields**

The development of agricultural extension programs dealing with:

- Decentralizing planning and implementation of extension programs, of rural development of field crops, horticulture and the production of animals, poultry and fish.
- Recognizing and quantifying the social changes that occur in rural as a result of agricultural sector development.
- Developing centers for women, studying rural families at home and community for raising the standard of living and developing healthy and happy families.

### **Facilities**

Library - An Extension - Information Unit (under establishment)

### **Future Plans:**

Continuing exploration and improvement of the linkages between research scientists, Universities, extensionists, rural communities and individual farmers.

### **Main Specializations:**

Rural communities, rural women, extension programs and teaching methods and aids.

### **Foreign Cooperation**

- Training courses with different American Universities through NARP.
- The Afro-Asian Institute for Rural Development.
- Population Activities UN Fund.

### **Main Expertise**

- Conducting research of extension teaching methods, economics integrating women into agriculture and home.
- Analyzing and developing extension training for extension staff.

*Name of the institution: (7) Agriculture Engineering Research Institute.*

Ministry: Ministry of Agriculture and Land Reclamation.

Address: Nadi EI-Seid St. Dokki - Giza

Tel: 3487212

Fax: 716867

Head of Institute: Dr. Abdel Ghany M. EI Gendy

Starting Date: 1983

### **Main responsibility**

To assist in increasing agricultural production by introducing appropriate, mechanization technologies to end users with special focus on small and medium sized farms.

### **Types of Activities**

Research, Technological development - Technoeconomical studies-Consultation - Training - Analyses and Measurements.

### **Major Fields**

- Conducting applied researches to encourage mechanized farm operations
- Transferring appropriate mechanization technologies to farmers.
- Conducting on-farm irrigation research to optimize water use

- Providing, technical advice and consultancies to farmers and machinery manufacturers.

### **Facilities**

Computer center - Statistical unit - Library -(Agricultural machinery and tractors) -  
Experiment station at Sabakhba - (for Agricultural Machinery and Tractors) -  
Agricultural laboratory for rice research.

### **Future Plans**

- Solving field problems faced by farmers and assisting local manufacturers in initiating and improving new machinery in Egypt. .
- Using alternative sources of energy for drying and processing operations.

### **Foreign Cooperation**

-AID  
- JICA  
-GTZ  
- China, Thailand and Italy.

### **Main Expertise**

- Developing appropriate mechanization technologies and machines for local conditions.
- Design and application of Modern irrigation techniques.
- Laser techniques for precision land level.

*Name of the institution: (8) Central Agriculture Pesticides Laboratory*

Ministry: Ministry of Agriculture and Land Reclamation

Address: Nadi El-Seid St. Dokki - Giza

Tel: 3602209 - 3373860

Fax: 3602209

Head of Institute: Dr. Saied Omara

Starting Date: 1970

### **Main Responsibility**

Analyzing and evaluating imported and local pesticides.

### **Types of Activities**

Research - Technoeconomic studies - Consultations - Training, Analysis and Measurements.

### **Major Fields**

- Pesticide residue analysis and environmental pollution.
- Pesticide formulation.
- Mammalian toxicology.
- Insecticide bioassay.
- Photo toxicity of insecticides.
- Pest rearing.
- Resistance to insecticides in agricultural pests.

### **Facilities:**

Different labs - Library

### **Future Plans**

Technological development of different departments.

### **Main Expertise**

- Pesticide analysis and evaluation.
- Environmental pollution caused by pesticides.
- Resistance to insecticides in agricultural pests.

*Name of the institution: (9) Central Laboratory for Design and statistical Analyses Research – CLDSAR.*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 9 El Gamaa St. Giza - Cairo - Egypt

Tel: 5729469

Fax:

Head of Institution: Dr. Ahmed Aly Abd El-Halim

Starting Date: 1958

### **Main responsibility:**

The main objective of CLDSAR is to increase the efficiency of agricultural experimental design and statistical analysis at the ARC to insure valid information.

### **Types of Activities**

Research – Technoeconomic studies – Consultations for the ARC- training.

### **Major Fields:**

- The lab conducts applied statistical research in collaboration with different ARC institutes to increase the efficiency of the experiments
- The lab deals with designing on-farm trials including verification test factors, package and extension treatments.
- CLDSAR provides training courses for research staff, agronomists and trainees from other institutes and developing countries. I
- CLDSAR offers consultations and technical assistance to the Ministry Agriculture institutes and some other countries.

**Facilities:**

Statistical unit and library.

**Future Plans**

Designing Crop breeding programs for the production of high yield and quality, cultivates.

**Main Expertis:**

Experimental design and preparation of computer programs.

*Name of the institution: (10) Central Laboratory for Agriculture Expert System*

Ministry: Ministry of Agriculture and Land Reclamation

Address: EI Thawra St. Dokki - Giza

Tel: 3611477

Fax: 2604727

Head of Institution: Dr. Ahmed Rafea

Starting Date: 1991

**Main Responsibility**

The CLAES is helping farmers to optimize the use of resources and' maximize the production of food.

**Types of Activities**

Search - Technological development - Technoeconomical studies consultations – Training.

**Major Fields.**

- Developing agricultural expert systems for commodities and disciplines

economically important to Egypt.

- Enhancing the performance of the agricultural extension personnel.
- Help to increase food production per unit area.

#### **Facilities**

Computer system - Library

#### **Future Plans**

Updating and improving the efficiency of developed expert systems and designing an agricultural experts system for each agricultural strategic crop.

#### **Main Specializations:**

Expert systems - Computer.

#### **Foreign Cooperation:**

Relations with USA Universities

#### **Main Expertise:**

Agricultural production systems.

*Name of the institution: (11) Central Administration for Expert and Research stations*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 9 El Gamaa St. Giza - Cairo

Tel: 5721207

Fax: 5721.207

Head of Institution: Dr. Abd El Maaboud Abd El Shafi Ali

Starting Date

#### **Main Responsibility**

- Conducting research programs for field crops and horticulture.
- Growing seeds of selected varieties.
- Helping farmers to solve technical problems.

#### **Types of Activities**

Research - Technological Development - Consultation - Training a Laboratory

Analyses.

#### **Facilities:**

Field and lab research - genetic engineering.

### **Future Plans**

- Contribution in agricultural development.
- Solving the problems facing scientific plans.

### **Main Specializations**

Engineering - Commerce - Animal Production - Crops Agriculture Engineering  
Cultivation Technology-Plant Production. Budget:

### **Foreign Cooperation**

Sending scientific missions abroad.

### **Main Expertise**

- Production of improved new varieties of field crops and horticulture.
- Solving scientific problems in production schemes.

*Name of the institution: (12) Central Laboratory for Alkaline and Saline Soils*

Ministry: Ministry of Agriculture and Land Reclamation

Address: Bakkus - 21616 Alexandria

Tel: 5704441 - 5704443

Head of Institution: Dr. Salwa Ibrahim Ghouweil

### **Main Responsibility:**

Conducting scientific and applied research on saline and alkaline affected soil.

### **Types of Activities**

Research - Consultations - Training - Analysis and Measurements.

### **Major Fields:**

- Identifying factors responsible for soil salinity and proper methods for its development.
- Recommendations for treatment of saline soils.

### **Facilities:**

Labs - Library

### **Future Plans**

Cooperating with the Soil and Water Research Institute. .

**Main Specializations:** Soil Sciences

**Foreign Cooperation:** mission to USA through NARP

**Main Expertise:**

Scientific and applied research of saline soils and treatment

- Salinity resistant plants.

*Name of the institution: (13) Desert research center*

Ministry: Ministry of Agriculture and Land Reclamation

Address: 1 Mathaf EI-Mataria St.

Tel: 2435449 - 2435519 - 2430759

Fax: 2457858

Head of Institution: Prof. Dr. Nabil EI-Moelhy

Starting Date: 1927

### **Main Responsibility**

1. Investigating desert potential for agricultural development
2. Carrying out studies on behalf of governmental institutions, societies and small landholders.
3. Preparing postgraduate research assistants and scholars for higher degree study in the field of scientific research

### **Types of Activities**

- Exploring and evaluating groundwater aquifers in desert regions.
- Drilling and testing productive and test water wells.
- Surveying and evaluating surface water in coastal regions.
- Monitoring groundwater in desert and newly reclaimed areas.
- Managing desert and newly reclaimed soils with respect to their agricultural use and development.
- Surveying and evaluating natural vegetation' as a source of grazing and medical desert plants.
- Increasing the productivity of leguminous and cereal plants under desert soil conditions through biofertilization methods.
- Protecting and improving range forage resource.
- Increasing the productivity of animals in desert conditions, by implementing measures to overcome food shortages during the dry season, heat stress, water salinity and desert diseases.
- Monitoring and analyzing desertification solutions to stop or minimize desertification processes with the aid of space maps taken by the DRC's

Satellite Receiving Station.

- Establishing green belts around newly constructed cities, roads and factories.
- Monitoring and recording sand dune movement and using various techniques to stabilize sand dunes.
- Conducting socioeconomic studies in the fields of marketing, cooperatives, settlement and labor.
- Providing proper help and advice to target groups whether local Bedouins or investors, to best. Utilize available resources. .
- Studying environmental pollution of soil and water in extension areas.
- Investigating the performance of. Some species and cultivars of agricultural field crops, fodder, vegetables, and fruit crops, formulating proper agriculture practices, and defining cropping systems and farming types under different desert conditions.

**Facilities:**

1. Tissue Culture Lab
2. Geographical Information Systems (GIS)
3. Satellite Receiving Station
4. Private Service Unit (PSU)
5. Library

**Future Plans**

- Simulating soil erosion with wind tunnels to study such processes as the relationship between wind velocity and soil loss, the aerodynamic properties of windbreaks, and sand dune movement relative to dust storm emergence.
- *Carrying out extensive geophysical exploration studies and drilling several new water wells in east Oweinat area and later extending the study to the southern region of the New Valley.*
- Conducting research on watershed management, catchment modeling, and water harvesting potentials in South Sinai and in Eastern Desert.
- Increasing wheat productivity under rain-fed conditions at the northwestern coastal zone by using different management and water harvesting systems.
- Creating rural settlements around new cities being built in desert areas.
- Screening, evaluating, and mapping of the natural plant cover and conserving a plant collection to be exhibited at the DR. herarium.

- Groundwater assessment and management of some coastal areas under development, such as Sheikh Zuweid, Nuwebia, and the Tin Plain, and some desert depressions, such as Siwa Oasis and groundwater exploration in the central portion of Sinai.

### **Foreign Cooperation**

- Middle Eastern Radioisotope Center for Arab Countries.
- Arab Center for Studies of Arid and Desert Lands (ACSAD).
- European Union
- Organization of African Union.
- Sahara and Sahel Observatory (SSO), Paris
- United States Agency for International Development (USAID)
- American universities, including Boston, Maryland, New Mexico, and Arizona
- United States Department of Agriculture (USDA).
- International Atomic Energy Agency.
- Food and Agriculture Organization.
- United Nations Development Program
- United Nations Environmental Program

### **Main Expertise**

- Conducting socioeconomic studies in the new lands for different groups of farmers. Identifying problems faced by people in the desert governorates from the point of view of inhabitants and officials.
- Conducting economic assessments of water use in desert lands.
- Conducting policy studies to help establish an export system for high return horticultural products in desert areas.
- Evaluating cooperatives, national firms, individual private farms, and the tenure systems to identify optimal investment potential.
- Investigation of viable desert as a prerequisite to agricultural development.
- Studies directed toward identifying new land reclamation sites, and setting socioeconomic indicators for desert areas.

### **Third: Ministry of public works & Water Resources**

*Name of the institution: (1) The National Center for Water Research*

Ministry : Ministry of Public Works & Water Resources

Address : Fom Terat El Ismaileya - Shoubra El Kheima

: 13411 , P.O.Box 74

Tel : 2213532 - 2227351 - 2227350

Fax : 2208219

Head of Institution : Prof. Dr. Mahmoud Abdel Halim Abou Zied .

Starting Date : 1975

### **Main Responsibility**

Ensuring and developing water resources and protecting them from pollution.

### **Types of Activities**

Research - Technology Development - Engineering Design Technoeconomic studies -

Training - Tests, Laboratory Analyses and Measurements - Quality Assurance.

### **Major Fields**

- Irrigation and subsoil water.
- Renewable energy.
- Protection of water conduits.

### **Facilities**

- Central laboratories.
- Laboratories for soil and material testing, supervision and quality control.
- Laboratories for fish used in the biological combating of grass.
- Computers Unit.
- Strategic studies unit.
- Data Base and information system.

### **Future Plans**

*Concentrating on the best use of water resources available, protecting them from pollution, upgrading irrigation systems in order to afford enough water for future expansions*

### **Foreign Cooperation**

- The Center has many scientific relations with international institutes, such as:
- International Water Resources Authority (IWRA) - USA.

- The International Authority for Irrigation (ICID) - India.
- International Irrigation Management Institute (IIMI) - Serilanka .
- Food & Agriculture Organization (FAO) - Italy.
- USAID
- Canadian Institute for Development (CID) - Canada.
- Canadian International Development Authority (CIDA).
- UNESCO.

### **Main Expertise**

- Planning Strategies and policies on short and long term basis for management of water resources.
- Designing irrigation projects.
- Protection of the Nile water from pollutants.
- Reuse of effluent water.

### **Fourth: Ministry of Health & Population**

*Name of the institution: (1) National Organization for Drug Control & Research*

Ministry : Ministry of Health and Population

Address : 6 Abu Hazem Street - EI- Haram

Tel : 5850005 - 3496077

*Fax* : 5855582 - 3379445

Head of Institution : Prof. Dr. Ahmed Shawky-Geneidy

Starting Date : 1976

### **Main Responsibility**

*Assurance of drug effectiveness & expiration dates in Egypt.*

### **Types of Activities**

Research - Technology development - Studies - Consultancy - Training Quality assurance.

**Major Fields:** Medical Drugs

### **Facilities**

*Information center - Statistical unit - Library - Animal testing - Implanting tissues & Biotechnology unit, Drug Research magazine (international)*

### **Future Plans**

Developing research institutes affiliated to the organization.

Constructing specialized institutes in pharmacology - Science and Organic Biology.

### **Main Specializations:**

Pharmacology - Organic chemistry - Biology - Chemistry – Pharmaceutical - Medical plants.

### **Foreign Cooperation**

Scientific relations with WHO and a number of American drug & nutrition organizations.

### **Main Expertise**

Drug control quality assurance - guarantee effectiveness of all drug in Egypt (local imported).

*Name of the institution: (2) Nutrition Institute*

Ministry: Ministry of Health and Population

Address : 16 El Kasr El Einy Street

Tel : 3643522 - 3646413

Fax : 3647476

Head of Institution : Prof. Dr. Wafaa Moussa

Starting Date : 1955

### **Main Responsibility**

Raising the health levels through correct nutrition schemes

### **Types of Activities**

Research - Studies - training - laboratory - analyses & measurements nutrition.

### **Major Fields**

Nutrition

### **Facilities**

Clinic - 6 large laboratories

### **Main Specializations:**

General Health - Preventative Medicine - Pharmacology – Chemistry-Agricultural Science -Nutrition -Food Science

### **Foreign Cooperation**

Scientific, relations with UNICEF, FAO, WHO, International Union for Nutrition

Science, and the International Consultancy Group for Vitamin A

***Main Expertise***

- Treatment of disease caused by malnutrition
- Examining & registering food imports.
- National Strategy for formulating and upgrading the level of nutrition and health in Egypt.

*Name of Institution: (3) Research Institute of Medical Entomology*

Ministry : Ministry of Health and Population

Address : 1 El Mathaf ElZe,rai St. - Dokki

Tel : 3355570

Fax :

Head of Institution : Prof. Dr. Kamilya Ali Mahmoud

Starting Date : 1961

**Main Responsibility**

Study insects transmitting diseases, and means of combating.

**Types of Activities**

Research - Consultancies - Training - Tests and Laboratory Analyses.

**Major Fields**

Parasites and insects transmitting diseases.

**Facilities**

- Library.
- Different Laboratories.
- Equipped Cars for Field tests.

### Future Plans

Continuing research and studies for maintaining up to date techniques in the field of insects transmitting diseases.

### **Main Specializations:**

***Medicine - Agriculture - Parasites - Insects - Insecticides.***

### **Foreign Cooperation**

Exchanging publications and periodic' via the WHO

### **Main Expertise.**

- Planning insects transmitting diseases combating programs.
- Training personnel working in the field of combating insects.
- Analyzing and testing of insecticides.

*Name of Institution: ( 4) Field and Applied Research Institute*

Ministry : Ministry of Health and Population

Address : 10th of Ramadan Street - Qalyub - Qalubia

Tel : 02 - 2156433

Head of Institution : Prof. Dr. Mostafa Abd El Fattah Habib

Starting Date : 1954

**Main Responsibility:** Field & applied research in the field of health

### **Type of Activities**

Research - Technological Development - Studies - Training - Laboratory: Analyses & Measurements - Quality Assurance - Technology Transfer - Biostatistics.

**Major Fields:** Medical (Epidemiology)

### **Facilities**

Information Center- Statistical Unit - Library - Specialized Laboratory (Mainly for Schistosomiasis, Diarrhea and Chemical Pathology) .

### ***Future Plans***

- Establishing a center for disease control in Egypt
- Establishing a food & drug administration in Egypt.
- Establishing rapid mobile Epidomology teams to face epidemics and other catastrophes.

### **Foreign Cooperation**

Strong scientific relations with scientific American institutes such as CD (Center For Disease Control), Tulane University, University of Texas Maryland University, Nashville & Yale University.

**Main Expertise,**

- Field & applied research in the health & pestilence fields.
- Computer use in the pestilence fields.

*Name of Institution: (5) Cairo Demographic Center*

Parent Organization: Minister of Population Family Planning

Address: 78 Street 4- EI Hadaba EI Alia - EI Mokkatam

Tel: 5060950 - 5060485

Fax: 5062797

Head of Institution: Prof. Dr. Hesham Hassan Mokhlouf (Director).

Starting Date: 1963

**Main Responsibility**

- Applying scientific methods in the field of population studies.
- CDC award academic degrees (Ph.D./M.S/Diplomas)

**Type of Activities.**

Research -Consultancy - Training – Education

**Major Fields:** Demography - Statistics - Computers

**Future Plans**

- Increasing academic & training services.
- Increasing studies & applied research.
- Increasing relations with other countries.

**Main specializations:**

Demography - Computer Science - Statistics - Sociology – Economic Development

**Foreign Cooperation**

Scientific relations between the center & UNFP A , ESCW A , Harvard University .

**Main Expertise**

- Research & demographic surveys.
- Offering statistics & demographic consultancy.
- Preparing training courses in computers and various applications.

*Name of Institution: (6) Environmental Monitoring and Occupational Health and Safety (E. M. O H. S)*

**Address:** 1 Tayar Fekry Street -Embaba

**Telefax:** ( 202 ) 3119694

**Head of Institution:** Pharmacist / Wafaa Mohamed Shalaby

**Main Responsibility:-**

Nile Water Monitoring- Waste Water Analysis- Industrial Waste Water Analysis- Air Pollution Monitoring- Residual Pesticides- Environmental Researche Studies

**Types of Activities:** - Monitoring - Research – Training- Field and Applied Research in the Environmental Issues

**Facilities:** - Well Equipped Labs.- Modern Instruments as : Atomic Absorption – G.C (G.CMAS)- Ion Chromatograph

***The Central Directorate Of Environmental Affairs Includes Four General Directorates.***

- 1- The General Directorate Of Occupational Health
- 2- The General Directorate Of Environmental Health
- 3- The General Directorate Of Food Control
- 4- The Environmental Monitoring and Occupational Health Studies Center (E.M.O.H.S.C.). Each of Them Has Specific Responsibilities:

1. The E.M.O.H.C. Runs the National air Pollutant Monitoring Network and also It Directs and Operates The National Net Work For Nile water pollutant Monitoring.
2. The Center is also achieving Environmental Evaluation Studies for Some governorates; Lakes; Shore ...etc.
3. The center also is applying indoors and out door air analysis for some factories and evaluate their waste water treatment plants by analyzing waste water before and after treatment which are done through will trained teams
4. The Center includes pesticide analysis Lab which is responsible for, testing pesticides in food; air; water.. etc
5. Using modern high quality portable and lab equipments.

**Fifth: Ministry of Public Enterprise:**

*Name of Institution: (1) Industrial Designs Development Center*

Ministry: Ministry of Public Enterprise

Address: 203 El Ahram St.- El Taawon - Giza

Tel: 3865530 - 3866542 / 550

Fax: 3867466

Head of Institution: Dr. Fawzi Mohamed Zein El Din El Ahwagy

Starting Date: 1968

**Main Responsibility:**

Designing and manufacturing of products and production equipment, and establishing production management and quality control systems.

**Types of Activities**

Engineering Design - Consultancies - Training.

**Major Fields**

Production and Production management.

**Facilities**

- Information Center.
- Library.
- Different Workshops (Manufacturing of Moulds - Thermal Treatment  
Welding - Pottery - Electroplating).
- Training Unit.

**Future Plans**

Increasing the amount of services for different industrial companies.

**Main Specializations:**

Engineering - Science - Commerce - Literature - Law.

**Main Expertise:**

Serving and solving the problems concerning production in industrial companies.

*Name of Institution: ( 2 ) Egyptian Fertilizer Development Center*

Ministry: Ministry of PUBLIC INTERPRISE - Chemicals Holding Company

Address: Egypt - Dakahlia - Mansura – Talkha - SEMADCO (EFDC) P.O Box 35619

Tel.: (050) 521950 - 526810

Fax: (050) 525695

Telex: SEMADCO 92609

Head of Institution: Eng. Mohamed Fathy

Starting Date: 1988

**Main Responsibility:**

- Supporting Studies for the new production of different formulas of NPK fertilizers through the pilot plant.
- Anticaking - Slow Release Urea. .
- Developing Solid NPK, NP Fertilizers, Liquid NPK, Fertilizers APP.

**Maior Fields**

Chemistry - Engineering - Agriculture – Marketing

**Facilities**

Information Center - Statistical Unit - Library - Pilot Plant Unit - Nitrogen Research Unit - Physical, Prob. Lab. - Chemical Lab. - Agriculture Research Unit.

**Future Plans**

The Center after achieving its main objectives will represent a source of experience which then would be available to other countries in the region to cover both technical & economic, marketing aspects. I

**Main Specialization:**

Chemistry - Engineering - Agriculture

**Foreign Cooperation**

1. International fertilizer development center (IFDC), USA for technical assistance and training.
2. National fertilizer 'development center (NFDC) Pakistan for economic, marketing assistance.
3. Communication channels with International fertilizer companies such as: Norsk Hydro, Udhe, Topsoe, and M.W. Kellogg
4. Arab Fertilizer association (AFA) & International Fertilizer Association (IF A) for Data Exchange. .
5. Subscription of International Circulars, magazines periodics such as: ferrecon, fertilizer week, finds chemical engineering.
6. Procurement of research papers and reprints from different sources such as: IFDC. TVA, UNIDO.

**Main Expertise**

1. Executing feasibility studies for fertilizer projects depending on the data available about fertilizer on the domestic level and the international level through the specific weekly and monthly periodic around fertilizer production consumption, prices and new projects. .
2. The Center is equipped to develop NP, NPK plus micronutrients in liquid and solid states reasonable for the future coming needs and suitable for fertilization Systems and Modern agriculture techniques.
3. Excluding physical chemical analysis for liquid and solid fertilizers according to the international standard specifications.
4. Evaluating anti - caking material before being applied on a commercial scale.
5. The center is capable of editing a fertilizer situation monthly report around production, distribution, EX - Factory and Local market places prices and international prices, when the net consumption and inventory is available the center can monthly correct the yearly supply / demand balance and district the reasonable quantity time of export if any.

*Name of Institution: ( 3 ) Plastic Industry Development Center*

Ministry: Ministry of Public Enterprise (Chemical. Industries Holding Company).

Address: Infront of 25 Zaki Attallah street, El Saa Victoria - Alexandria.

Tel: 03/5705356

Fax: 03/5715516

Head of Institution: Dr. Eng.1 Hassan Saeed Mohamed

Starting Date: 1980

**Main responsibility:** Developing the plastic industry

**Type of Activities** Tests- training - plastics' application in agriculture.

**Major Fields**

- Quality control of the plastics' products and materials.
- Processing of plastics.
- Agricultural applications.

**Facilities**

- Laboratory testing equipment.
- Plastics processing machines.

### **Main Specializations:**

Chemical engineering- mechanical engineering science- electrical engineering – Science – agriculture.

### **Main Expertise:**

1. Scientific expertise in polymers and plastics' technology.
2. Scientific expertise in the field of laboratory tests.
3. Solving the problems of the plastic factories.
4. Training.
6. Plastics applications in agriculture and construction.

### **Sixth: Ministry of Industry and Mineral Wealth**

*Name of Institution: (1) Tebbin Institute for Metallurgical studies*

Ministry : Ministry of Industry and Mineral Resources.

Address : Tebbin, Helwan, P.O.Box 109

Tel : 5010171 - 5010172 - 5010176

Fax : 5010170

Head of Institution : Prof. Dr. Said Ezz El Din

Starting Date : 1968

### **Main Responsibility.**

Preparing specialists from engineers and university graduates in the fields of Metallurgical Coke, Chemicals, and Heat Industries.

### **Types of Activities**

Educational - Research - Development -Engineering - Technoeconomic Studies- Consultancies - Laboratory Tests & Measurements - Training.

### **Major Fields**

Environmental Protection- Energy Conservation - Casting /Welding - Heat Treatment - Automatic Control - Corrosion of Metals.

### **Facilities**

Library - Conference hall.

Chemical Laboratories - Mechanical workshop- Mechanical equipment lab - Electrical Engineering labs - The Central lab for Industrial Pollution studies - Air Analysis lab- Analytical chemistry and Microbiology lab Energy Rationalization in Industry lab - Heat Transfer and Industrial Furnaces lab - Metals lab - Mining labs -

Welding and Heat Treatment lab - Computer lab.

### **Future Plans**

The institute can be a specialized center in developing the technologies of energy rationalization, environmental protection and small-scale industries. It can also be an information center that serves the industrial field in Egypt and its development.

### **Main Specializations:**

Metallurgy - Automatic Control- Ovens - Cast Molding - Chemistry.

### **Foreign Cooperation**

Scientific relations with German, Russian and British Universities.

### **Main Expertise**

Preparing specialized technicians in the field of Metallurgy, Energy and Environment.

*Name of Institution: (2) The Egyptian Geological survey and Mining Authority.*

Ministry : Ministry of Industry and Mineral Resources.

Address : 3 Salah Salem st., - Abbaseya - Cairo.

Telephone : 839652 - 4829662

Telefax : 4820128

Head of Institution: Geologist/ Gaber Mahmoud Naim

Starting Date: 1896

### **Main Responsibility**

- Geological mapping of Egypt.
- Evaluation of mineral resources and suggesting their best use.
- Providing technical expertise to various sectors and major projects.

### **Types of Activities**

Research - Technoeconomic Studies - Consultancies - Training - Tests, Laboratory Analysis and Measurements.

**Major Fields:** Geological Research - Metallurgy - Subsoil Water.

**Facilities:** Information Center - Library.

**Future Plans:** Development and continuing the existing plans.

**Major specializations:** Geology - Physics – chemistry - Zoology

### **Foreign Cooperation:**

There are scientific relations with a number of universities and scientific institutes such as Berlin, Hidelburg, Washington, and Turonto Universities, as well as the ITC Dutch institute.

### **Main Expertise**

- Preparing and publishing specialized geological maps.
- Investigating material resources and evaluating them.
- Investigating subsoil water.

*Name of Institution: (3) Admistration of Chemistry*

Ministry: Ministry of Industry and Mineral Resources.

Address: 12 Ramsis St., Cairo - 11522

Telephone: 5743433 - 5743214

Telefax: 5740750

Head of Institution: Chemist I Ahmed Rashed El Dafrawy

Starting Date: 1898

### **Main Responsibility**

A supervising authority on the Egyptian market, especially industrial and food products, ensuring compliance with Egyptian standards, determining the appropriate custom duties and combating industrial and -commercial fraud.

### **Types of Activities**

Research - Technology Development - Training - Testing, Laboratory. Analysis and Measurements - Quality Assurance.

**Major Fields:** Different fields of chemistry.

### **Facilities**

Information center - Statistical Unit - Library - Laboratories.

### **Future Plans**

Continuing to update the laboratories.

Increasing fees for analysis to cover the increase in chemicals; equipment and maintenance prices.

### **Major specializations:**

Chemistry - Physics - Geology - Plants - Animal

**Foreign Cooperation:** Attending seminars & conferences abroad.

**Main Expertise**

- Defining and implementing Egyptian standards.
- Training chemists and engineers.

*Name of Institution: (4) Egyptian Organization for Standardization & Quality control*

Ministry: Ministry of Industry & Mineral Resources.

Address: 2 Latin America St., Garden City, and Cairo

Tel: 3549720

Fax: 3557841

Head of Institution: Dr. Abd El Basset El Sebai Mohamed.

Starting Date: 1957

**Main Responsibility**

Establishing standards, quality assurance & control for the different products.

**Types of Activities**

Research- Technoeconomic Studies- Consultancies- Training - Tests, Laboratory Analyses and Measurements- Quality Assurance

**Major Fields**

Quality control and quality assurance.

**Facilities:** Specialized Laboratories.

**Future Plans**

- Upgrading of quality control services.
- Upgrading of quality assurance and management systems.

**Main Specializations:**

Physics -Chemistry - Engineering – Agriculture

**Foreign Cooperation**

There are cooperative relations between the organization and other Arab, African and European authorities for standardization.

**Main Expertise**

- Establishing Egyptian standards.
- Offering technical advises to institutes and industrial companies in the field of

products quality.

- Supervising and testing products and services.

### **Seventh: Ministry Of Manpower**

*Name of Institution: (1) The National Institute of Occupational Safety and Health*

Ministry: The institute is under the-"Supervision of-H.E -the

Minister of Manpower and Employment

Address: 156 El Hegaz St. - El Nozha - Heliopolise

Tel: 2424355 - 2452630 - 2443995

Fax: 2424355

Head of Institution: Dr. Mostafa Fahmy Gaber

Starting Date: 1969

### **Main Responsibility**

- Conducting research and studies.
- Offering technical and field consultancy services.
- Preparation of training courses.

### **Types of Activities**

Research - Carrying out advisory services for industry in the field of occupational safety and health - Training - Analyses and measurements.

**Major Fields:** Occupational Safety and Health

**Facilities:** Information Center - Library - Laboratories - Mobile Laboratory Unit and Portable & stable equipment.

### **Future Plans**

Covering research and applicable studies as required by different organizations in Egypt- Africa and the Arab World.

### **Major Specializations:**

Chemistry - Medicine - Pharmacology - Engineering.

### **Foreign Cooperation**

The institute has many scientific relations with different international organizations such as:

The International Social Security Association (ISSA) in Geneva -The International Information Center (CIS) - and the International Research Center (INRES) in France -

in Geneva.

The institute cooperates with the International Labor Organization (ILO) World Health Organization (WHO) and others.

**Main Expertise**

- Upgrading the level of occupational safety and health on the National level.

**Other Ministries**

**A- ministry of Electricity and Energy**

1. Egyptian Atomic Energy Authority.
2. Nuclear Material Authority.
3. Egyptian Renewable Energy Development Organization (EREDO).
4. Electricity Authority of Egypt – High Voltage Research Center.

**B- Ministry of Housing, Utilities and new Communities**

1. Housing, Building and planning research center.
2. National Organization for Potable Water and Sewage.
3. Organization for Research & Reconstruction Studies.

**C-Ministry of Transport, Transportation and Civil Aviation**

1. National Institute of transport.
2. Research& Consultancies Center for the Marine Transportation Sector.
3. The National Authority for Roads and Bridges.
4. The Meteorological Authority.

**Other Governmental Universities & Research Institutes:**

*Table 9-A: Overview of Laboratory Infrastructure for Regulatory Chemical Analysis:*

	<i>Name/ Description of Laboratory</i>	<i>Location</i>	<i>Equipment/ Analytical Capabilities Available</i>	<i>Purpose</i>
1.	Agricultural Studies and	Faculty of Agriculture, Ain	Industrial Wastewater Monitoring and	Environmental Consulting Services,

	Consultancy Center	Shams University, P.O. Box 68, Hadayek Shoubra, 11241, Cairo, Egypt. Tel: 4448816-4441454 Fax: 4444460 Email: mansour@asunet.eun.eg	Analysis Equipment, Industrial/ Municipal Wastewater Equipment, Water Monitoring and Analysis Equipment, Domestic Water Treatment Equipment, Industrial Water Treatment Equipment	Water Analysis Services, Industrial Wastewater Analysis Services, Training Services in Environmental Management Systems, Solid Waste Management Services, General Environmental Training Services.
2.	Center for Environmental Sciences Technologies-Tanta University	El- Geish St., Tanta, Egypt Tel: 040-3312498 – 3317928 Fax: 040-3312498 Email: envstce@decl.tanta.eun.eg	Air Pollution Control Equipment, Hazardous Waste Management Equipment, Industrial/ Municipal Wastewater Equipment, Solid Waste Management Equipment, Domestic Water Treatment Equipment, Industrial Water Treatment Equipment.	General Environmental Training Services, Certifying Organizations, Training Services in Environmental Management Systems, Environmental Consulting Services, Water Analysis Services, Industrial Wastewater Analysis Services, Solid Waste Management Services.
3.	Center of Studies & Designs for Water Project (CWP)	Irrigation & Hydraulics Department, Faculty of Engineering, Cairo University, Cairo, Egypt. Tel: 5732949	Industrial Wastewater Monitoring and Analysis Equipment, Industrial/ Municipal Wastewater Equipment, Solid Waste Management Equipment, Water	Feasibility Studies, Training Services in Environmental Management Systems, Water Analysis Services, General Environmental Training Services,

		<p>Fax: 5732948</p> <p>Email: ghanem_ashraf@hotmail.com</p>	<p>Monitoring and Analysis Equipment, Domestic Water Treatment Equipment, Industrial Water Treatment Equipment</p>	<p>Environmental Consulting Services, Solid Waste Management Services, Industrial Wastewater Analysis Services.</p>
4.	<p>Central Chemical Labs – Egyptian Electricity Holding Co.</p>	<p>Shanan St., Saptia, Cairo, Egypt.</p> <p>Tel: 5768250-5770269</p> <p>Fax: 5778268</p>		<p>Air Measurement and Analysis Services, Industrial Wastewater Analysis Services, General Environmental Training Services, Water Analysis Services.</p>
5.	<p>Central Lab</p>	<p>Faculty of Agriculture, Ain Shams University, Shoubra El Khemia, Cairo, Egypt.</p> <p>Tel: 4441172 – 4441711</p> <p>Fax: 4444460</p>	<p>Industrial Wastewater Monitoring and Analysis Equipment, Industrial/ Municipal Wastewater Equipment, Water Monitoring and Analysis Equipment, Domestic Water Treatment Equipment, Industrial Water Treatment Equipment</p>	<p>Air Measurement and Analysis Services, Water Analysis Services, Certifying Organizations, Industrial Wastewater Analysis Services, Solid Waste Management Services, Training Services in Environmental Management Systems, General Environmental Training Services,</p>
6.	<p>Fermentation Biotechnology and Applied Microbiology</p>	<p>Al-Azher University, adjacent to Faculty of Science</p>		<p>Feasibility Studies, Air Measurement and Analysis Services, General Environmental</p>

	(Ferm – BAM) Center - Faculty	Building (of Boys), Nasr City, Cairo, Egypt. Tel: 4042166 - 4044802 Fax: 2629356 Email:A-Mokhtar oo@hotmail.com		Training Services, Water Analysis Services, Training Services in Environmental Management Systems, Solid Waste Management Services.
7.	Unit for EIA and Environmental Audit Center for Environmental Consultation	Ain Shams University, Institute of Environmental Studies and Research, Cairo, Egypt. Tel: 6370327 – 2434259. Fax: 6370327.	Air Pollution Control Equipment, Industrial/ Municipal Wastewater Equipment, Solid Waste Management Equipment, Industrial Water Treatment Equipment.	General Environmental Training Services, Solid Waste Management Services, Water Analysis Services, Air Measurement and Analysis Services, Industrial Wastewater Analysis Services, Training Services in Environmental Management Systems, Certifying Organizations, Feasibility Studies, Environmental Consulting Services.

## **9.2 Overview of Government Information Systems / Computer Capabilities**

- ▶ Information & Decision Support Center (IDSC) ([www.idsc.gov.eg](http://www.idsc.gov.eg))
- ▶ Information Center of all Miniseries (Industry, Agriculture, Irrigation & Water Resources, Health & Population, Manpower & Emigration, Transportation, Foreign Trade, Interior, Petroleum and Electricity & Energy...etc.
- ▶ Central Agency for Public Mobilization and Statistics (CAPMAS)

***N.B: It should be mentioned that Table 8-B in Chapter (8) explain in details the location of national data in Egypt***