Five Year Plan
for the Specific Councils
1983-1987

Arab Republic of Egypt
Academy of Scientific Research & Technology
December 1982

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In the Name of God

The Merciful, the Compassionate

The educated portion of our population, who have feelings of integrity and obligation, are requested to join the field of public service with their full weight and capacity.

It is not acceptable that Egypt brings in experts, when some of its own citizens have attained the highest standards in the world in different fields of science and philosoply and have become pioneers in human progress with world-wide recognition and fame. They are urged to give all their knowledge and experience to the building of the "new" Egypt which has never given up on them.

Quotes from President Mohamed Hosni Mobarak given before both the People's Assembly and the Shura Assembly, on Sunday, November 8, 1981.

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Introduction

Thanks be to God who entrusted us with knowledge and the exploitation of it for good. God Almighty said, "Have fear of God who taught you what you know".

Thanks be to God who gave this country the manpower able to give endlessly.

Thanks be to God who gave us plenty of land, a good climate, an able individual, and plenty of resources.

Our society has faced a number of problems. There is no disagreement that these problems exist due to the lack of utilizing the national capacity to face them. Therefore, it is necessary that all national agencies - and the academy is one of them - work hard in pursuit of solutions to whatever problems may face the national development plan.

The Academy, since its formation in 1972, has been working on the formulation of a scientific plan based on the need to solve the problems of development in this country. In each of the attempts of the Academy, part of that hope has been fulfilled. Perhaps that only part was fulfilled is due to the general climate which was not ready to accept that trend of thought. Or let me say, the suitable climate was not present which believed in the ability of science to service the decision-maker.

There is a great difference between searching for a philosophy or a principle, and having the philosophy or the principle implemented.

Perhaps it is God's will that gave me this outlook to work on the new hope that could develop into a road for implementing the goals for the formation of the Academy, and to fulfill the targets of the political leadership of the country concerning the scientific work helping the development issues.

In the reader's hand is the product of a long, great effort of Egyptian scientists in connection with production and service units in the country. Ministers participated in determing the path of the effort. We are, therefore, hopeful of having the plan (in all the areas covered) be adopted as a constitution to which all scientific agencies and implementing agencies will be obligated.

The plan is an obligation and a commitment. The Academy is commited to carrying on the research project with all its developmental dimensions in all feidls (industry - agriculture - and service). The Academy is obliged to carry out the research project to the fullest extent, being helped in that by the backing and support of concerned ministers, since the plan stemmed from a priorities framework which was determined according to both needs and abilities, taking into consideration the international cooperation program.

The Academy, in preparing the plan, was bent on having the plan be supported on two main bases. The first was the commitment to study

present and future problems. The second was to use the most suitable (up-to-date) scientific methods, and to exploit laboratories - with the fullest capacities - to open new areas or science that could help the Egyptian people.

If I have one more word that I will be careful to register, it is to deeply thank all those who participated in this effort.

We hope that this is a good beginning, and that science will be put to service, a style which has been adapted by many countries which have achieved prosperity and development for their peoples.

Dr. Ibrahim Gameel Badran
President of the Academy

Presentation

Development of Specific Councils and the Five Year Plan for Research

Research and planning are two matters that go hand in hand. Both aim at enriching development; reserach by presenting results which, when applied, lead to either increasing production or improving its quality; planning by guaranteeing the integration of the job and the best use of inputs at the least possible cost with the best possible return. They are two sides of one coin and neither one can be separated from the other.

Hence, the participation of science in solving society's problems becomes essential through regular planning.

The first attempt at putting a framework for scientific research began almost twenty years ago when the Higher Council of Science prepared - through its eight departments in 1959 - the first scientific plan which included a number of research projects in different fields. It was not possible to implement most of them because of the lack of financial capability and human technical abilities available then.

The second attempt was in 1966, when the Higher Council of Science prepared research projects with high priorities. Technical committees were formed to study each project. These projects were never realized, except in a very limited manner, because of the lack of available funds.

The ideas of the National Council for Education and Scientific Research - as one of the specialized national councils - add a new role to that of

scientific research in many aspects which are tied to social and economic development. In some of the working papers, these ideas recorded the means and recommendations that have to be followed or what projects need to be carried out to help solve the problems facing Egyptian people.

In 1971, Presidential Decree number 2405 was issued for the formation of the National Academy of Scientific Research and Technology to be the official authority responsible for: supporting scientific research, applying modern technology in all aspects included in the programs of social and economic development, and formulating the policy that would connect the scientific research and technology bodies on the national level with the main directions of scientific research and technology that are adopted to help face the needs of the general development plans. The academy was the best suited place for performing this national duty according to studies performed by many experts, Egyptian and foreign.

At the beginning of 1972, the Council of the Academy defined a national problem as one characterized by generalities and the many aspects of its creation and the many things it causes by not having a solution for a long time period. On the other hand, a principal problem is one concerning a particular sector and only one organization is interested in finding a solution for.

The Council then determined which problems the specific councils would plan necessary research for. With the funds available in 1974, the Academy started contracting for these "projects".

Beginning in this manner was necessary, although the contracted projects did not form programs with determined targets and objectives. However,

they aimed at solving some problems in specific sectors. Through that practice, the Academy acquired experience in both contracting style and team research as the basis for looking at the problem from different angles, which had not been familiar on the national level.

In 1977, the Academy published a booklet about the plans, problems, and projects of the following period through which the main policy directions in many fields were stressed. Most of the ideas that were put into that frame were not realized because of different reasons. The most important reasons were:

- They were not supported by the main directions that stemmed from the national development plan.
- They were the thoughts of one side. They were not discussed and chosen in cooperation with the concerned organizations which would apply them and benefit from them.
- They were generalized and not specific; their scientific contents were not complete, and many of the projects were not phased for implementation and no schedule was determined.
- No priorities were determined for the projects.
- The plan as such was not adopted in real terms by the specific councils which would have eased its implementation.

Then, the Academy passed through a period that was characterized by the shrinking of both the number of councils and the number of members. This resulted in the lack of integrated representation, in addition to having some councils transferred into subsidiary committees. Hence, both the activities and ambitions of the specific councils decreased a great deal.

In the beginning of 1981, the Academy's interest was directed towards changing its outline with the aim of increasing both capacity and effectiveness in serving the development issue. It was only natural that the specific councils were the first bodies needing modification. The councils in the different sections of the Academy are like a heart to a body in the concept of input and output. They are the able members which carry out the tasks of coordinating with the effort of scientific research and technology and that of the national development effort since they are a national source which includes all the scientists and experts of different organizations and former high ranking officials at both scientific and implementation levels. The specific councils are therefore a melting pot where knowledge and experience blend for the benefit of the Egyptian people - not the benefit of a particular individual of group. Therefore, the modification had to include the philosoply of forming the council; the style of carrying out their jobs; and the necessary capacity to fulfill their objectives.

In July 1981, the number of specific councils was increased from six to eleven to cover the areas of resources, production, services, infrastructure, social development, economic development, and political sciences. These councils are:

Food and Agriculture; Health and Medicine; Environment; Oil and Energy and Mineral Wealth; Industry; Housing and Reconstruction; Transportation and Communications; Management and Economy; Society and Population; Basic Sciences; and New Communities

From each council, some departments and specialized committees were formed to study issues from a more detailed perspective. There were 46 departments and 23 committees which contained approximately 800 members who

were scientists acknowledged in their fields by their vast experience.

In order to spur the performance forward to fullfil the aims, it was necessary to evaluate the performance of the councils during their years of existence. The evaluation considered the following:

- Analysis of the activities of each council to determine the subject, scope of work, style of supporting the activities, and how far implementation was carried out.
- Extent of the cooperation between different councils which would lead to the highest possible scientific return.
- The organizational skeleton of workers according to their fields of work and how they are integrated to guarantee a good and easy performance.
- Ways and means of increasing activities and avoiding obstacles.
- The developmental component of every subject or project and how far this component is in line with the priorities of the national development plan.
- The extent of coordination with the concerned organization in the country.
- The activities of the Academy in accordance with the regulations of the Council of the Academy issued in 1971.
- The role of information and advertisement.

According to what the studies and analyses indicated, a suggestion was prepared for modifying some of the articles of the regulations of the Council of the Academy. The change would better suit the work requirements in the new stage. This change will be presented to the Council of the Academy in a coming session.

The skeleton of sectors under the deputy to the chairman of the Academy includes the following in order to ensure coordination and integration between different administrations:

- Sector of the Affairs of **Specialized Councils**

The frame of its scope of work is as follows:

. National plan

. Scientific debates

. Follow up of current projects

. Best use of finished projects

. Information and scientific guidance

. Being acquainted with applied research in other agencies

. The convention for the specific council

. Suggestions for aspects of foreign cooperation

- Sector of Scientific Communication

The duties of this sector include strengthening ties between the Academy and other research bodies and implementing agencies to help determine the principal problems and indicate the role of scientific research in determining their solutions. These duties are accomplished through its three groups:

. The committee of coordination with universities

. The office of contact with local authorities

. The office of contact with production and services units

- Sector of following up on the projects

Its duties are:

. Financial and administrative follow up for research projects

. Preparing the budget in view of needs of the scientific plan

. Financial auditing of the budget for new projects

. Preparing contracts

. Following up on research results

. Following up on technical reports

. Being acquainted with scientific activities in other scientific organizations.

- Agency for Marketing of Technological Research

Its duties are:

. Determining the scientific groups

. Making known the results of projects and research work

. Being acquainted with types of studies needed in the different sectors

To safeguard against repetition of effort, the specific councils and their sub-committees began their assignments by preparing reports about their activities, programs, and style of carrying out operations from the time they were formed in the Academy until 1981. These reports were issued in 16 books whose pages total 2258. These books include the following items for each council:

. A report about the activities and meetings of the council from the time the council was formed until September 1, 1981.

. Research projects that were finished and those still being carried out. Also, projects under contract which were approved by the council and its conventions.

. Conventions of the council

. Debates

. Working papers

. Relation between the council and other councils and organizations in the Academy.

. An overview of the needed research projects.

. The recommendations of the conventions of the specific councils and those of the Academy.

. Names of the members of the council and its committees in the past years.

After a detailed study of what was done and how it should have been done, the specific councils formulated policies - that would best fulfill their obligations - based on some major factors, the most important of which are:

- The integration between the scientific plan of the Academy and tnat of the national development.
- Support for the national scientific abilities and for creating and developing national technology.
- Support for the scientific and technological infrastrucutre.
- Strengthening ties between different research organizations and the organizations concerned with products and services in ministries, localities, and both public and private sector establishments.

The decision to form a five year research plan was taken by the Academy, and it was only natural that the specific councils would undertake that national duty.

In order for the plan to have the goal of serious development, taking into consideration available resources, a chosen group of the best scientists from universities and research centers summarized the national five year plan as issued in August 1981 by the Ministry of Planning for different sectors. This summary was given to the members of every specific council to study and help in formulating their own research plan.

The specific councils, their committees, offices and departments held many meetings, amounting to more than 400 in the period between January 82 and September 82. Time consumed for preparing the five year research plan amounted to more than 9000 manhours, excluding the hours put in preparation of working papers and the hours by employees of the specific councils in preparing minutes of the meetings, documents, and conventions of the councils.

The suggested research plan for the field of each council was prepared in detail for their programs and studies which were to be financed totally or partially or were to be supported only by the Academy. The plan was based on two major axes:

The first axis: To continue with the current contracted research projects in different areas to fullfil the following objectives:

- Participation in solving national problems
- Supporting the infrastrucutre of scientific research
- Financing national projects with multi-research sides
- Strengthening the ties between the scientific research society and the implementing societies by publishing the results of research work in booklets, by publishing textbooks, and by holding scientific seminars that are concerned with national issues.

The second axis: To include new projects, some of which are a continuation of old subjects, while others are on new subjects.

The plan was sent to the concerned ministers, each in his sector, and was later presented to the implementing agency and to concerned personnel in the convention of the council held in the concerned ministry where it was approved. Undoubtedly, carrying out the plan - after approval at different

responsible levels in the country - depends on the funds available, after arranging the projects according to priorities and advertising them.

This step taken by the Academy to guarantee the participation of all concerned agencies in determining the five year research plan for the specific councils only emphasizes the new philosophy adopted by the academy in the following group suggestions instead of individual suggestions. The group suggestions are presented after exhaustive planning by scientists and implementing personnel for national problems, improving production and services in important sectors according to determined priorities, and within the framework of social and economic development in search for a quick, positive return.

It is important to note that the sequence of presenting the programs and research projects included in the five year plan and as shown in this book does not represent them in their degrees of importance. They will be re-arranged according to priorities in light of: meeting the immediate needs of the society; integration and coordination with national technological and scientific activities; timing with the implementation schedule of the main directions of the national development plan; and, the volume of participation in solving the national problems.

It is also important to note that the participation in the execution of these national problems is not monopolized by a specific institute or univeristy or ministry. The success of the program depends on guaranteeing the real participation and the collective efforts of different schools in the country. It is important to make sure that having one scientific school work on a project was based on a fair evaluation of all schools

capable of performing that project which would be financed by the Academy. The evaluation will be according to clear procedures and conditions which take into consideration the following:

- To help promote some schools and to create some new schools
- To help group together integrated research workers.

Therefore, information and advertisement for projects to be contracted will be done in a manner that guarantees that they will reach all who might be interested.

Advertisement can take many forms according to both the nature and volume of the project, such as:

- Direct order: This will apply to national projects connected to particular agencies, projects that require capabilities that only few schools have, and projects that need particular and scarce specialization. Objections to this method include the ideas presented by the chosen team of scientists who would be the only ones chosen without comparing them to ideas of other sources so that the best are chosen.
- Limited advertisement: This will apply to projects that need the capability and experience available in limited bodies which can be pinpointed precisely on the national level. However, there will be a limited chance for evaluating offers.
- General advertisement: This will apply to most of the projects where benefit will come from ideas presented by different research teams which represent different schools of thought in different environments, either national or international. This will be for the benefit of the project regardless of the team that will be awarded the contract.

The specific councils will choose the best way of advertisement for a particular project, evaluate the different bids, and choose the best bid to be awarded by the Academy.

After the specific councils formulate their five year research plan, they are looking forward to more development. Perhaps the most important of the future problems - at the present time - is giving a greater push to scientific and technological work in the area of rural development. The work will be carried out with great and strict cooperation between implementing bodies in the ministries, local governing authorities in the governorates, and universities in those areas in response to the fact that rural development will tremendously affect the life of every Egyptian, whether in urban or rural areas. The Academy is working on development of the facet of environmental data, support for the formation of environmental offices in the governorates and other organizations concerned with the same subject. The plan, in this manner, will put - God willing - greater emphasis on the role of the research worker and will best invest the available resources. This will be a continuation of the policy of the specific councils that led to some positive results in the past few years, examples of which are:

The national effort to increase the production of maize. The production per feddan amounted to 26.4 ardab and the return cost ratio became 5.7:1. The Ministry of Agriculture adopted the procedure recommended by the Academy. The ministry will expand in applying the results in 1982/83.

Environmental studies on the American boll cotton worm. Due to applying the recommendations resulting from those studies, there has been a great saving in the amount of pesticides used against this worm. The concerned bodies in the Ministry of Agriculture adopted those recommendations.

Project to transfer 80 feddans of Abbasa pond into a fish farm. Results of this project are an increase in production of the feddan of the fish farm from 100 kilograms to 788 kilograms.

Project to increase production in Karoon Lake. Fish production from the lake increased from 884.6 tons in 1974/75 to about 2000 tons in 1980/81.

National project for using BCG vaccine to protect sheep from some contagious diseases. One of the most important results was to reach an effective way to protect sheep from "false TB" and Rift Valley fever, by use of the BCG vaccine. The application of the results - nationwide - will save the country over LE 10 Million that would have been lost because of the disease.

Factor of safety for underground water reservoirs in both the Delta and Upper Egypt. Studies showed that the underground reservoir in the Nile valley and the Delta is considered one of the biggest in the world. (Its capacity is about 400 miliare m^3.) A plan was devised within the water policy of the Ministry of Irrigation to start benefiting from this reservoir. The first stage of this project will start on 5000 feddans in Upper Egypt and the Delta. Expansion will then follow in other areas.

Project for finding an alternative to clay for use in the brick industry. Results of this project pointed out the abundance of silt which can be used instead of clay in the brick industry. The silt estimated in three zones in Helwan and greater Cairo is 132 million cubic meters, or enough to produce 122 milliare bricks which could cover the building needs for 50 years. The Ministry of Housing expanded the building of factories to manufacture bricks from silt. The ministry is also modifying the existing red brick factories.

Project for the use of stabilized solutions from gelatin as an alternative to human blood plasma.
Practical experience in the area of blood transfusions has shown the importance of finding an alternative to blood plasma for use in emergency cases. Consequently, the General Egyptian Authority for Biological Compounds began production. The Authority produced more than 25,000 units that were totally successfully used in accordance with the specifications recommended in the project.

Project for determining both coefficients and models for technical and economical planning for freight transportation in Egypt. The most important results were the formulation of a mathematical model to project future needs of freight transport, taking into consideration social, economical, and natural conditions in the country and the traffic assignment and mode of transport in the different stages of transport planning.

Production of curdling agents (alum-sodium ammoniates-active silica) locally. Results clearly indicate that locally produced alum is more efficient than the imported, using the same amount for treating

water. Results were also achieved on the best way to produce alum from desert silt.

Project to design a model for rural house and development planning in the village.

The specifications for designing and modifying the peasant's housing to best suit his needs are needed. These specifications can be followed for all rural areas in Egypt to help develop the Egyptian village into an independent society, especially after extending electricity. This will turn villages into points of attraction instead of otherwise.

The specific councils while presenting this document consider it a way to real participation and effective performance in solving the problems of social and economic development in Egypt. This agrees with the political leadership in easing the burden on the Egyptian individual and furnishing a suitable portion of his needs for both his present and future.

I pray to God that we move on the right and serious route.

Deputy to the President of the Academy

Dr. Abu El Fatah Abd El Latif

Chapter One

On the Preparation of the Five Year Plan for the Specific Councils

.. Procedure for preparing the plan:

The scientific society represented by the Academy of Scientific Research and Technology, realized the vital importance of programming research projects that help solve both national and principal problems and determining their priorities.

To do this, different sectors in the academy followed the following procedures:

1. The academy believes that the national development plan is not going to yield what is expected from it unless there is complete coordination between what the agencies of scientific research at all levels do and the national social and economical development plan for all sectors of both production and services. To emphasize this, the academy assigned the task of summarizing the national five year plan, published by the Ministry of Planning, in August 1981 in eight books, to a team of scientists and research personnel from the academy's different organizations. This was published in one book of about 400 pages which includes eight chapters.

First Chapter: Egyptian People

Second Chapter: General Strategy for Agriculture, Irrigation, and Food Security

Third Chapter: General Strategy for Industry and Mining

Fourth Chapter: General Strategy for Energy

Fifth Chapter: General Strategy for Housing

Sixth Chapter: General Strategy for Transportation and Communications

Seventh Chapter: General Strategy for Trade and Finance

Eighth Chapter: General Strategy for Sectional Development

This book was at the disposal of the different specific councils as a guide while formulating their five year research plan.

2. The president of the academy held a meeting with the chairmen of the specific councils on January 12, 1982. The discussion included the following:

* The academy is a national umbrella for scientific research. Great expectations are anticipated from the academy and the academy will take the major role (as the umbrella for scientific research) in applying the results in the whole country.

* The necessity to formulate a thoroughly studied five year reseach plan that stems from the national development plan, with the importance of concentrating on a limited number of principal problems, applied research, and application of technology. This would show clear effects in a limited period of time. In this respect, the research plan in the research centers should be directed to solve the problems that confront development.

* It is vitally important that concerned ministers participate in the activities of specific councils. The ministers should be invited to attend the meetings of the specific councils to present and determine both the problems and projects that need to be studied by the council.

3. The academy presented the matter to the council of the academy in its thirty-sixth session on January 14, 1982 for approval, assigning to specific councils the task of formulating the necessary scientific research plan to meet the requirement of having scientists and technologists participate in solving the problems of their own society and implementing the social and economic development. The plan should be based on the present situation with projections for the future, taking into consideration world conditions and challenges that face Egypt, both nationally and internationally.

In this respect the council of the academy issued Decree Number 475 (second article) to have specific councils prepare their work programs within the framework of a five year plan.

The following is the wording of that decision:

1. The specific councils will prepare their work programs within the framework of a five year plan in connection with implementing agencies that benefit from them; this will help the specific society participate in solving the problems of society, implementing the development on the condition that the plan is programmed, determining the necessary projects in order of priority and cost, the best Egyptian agencies to carry on the research, and determining the return to the beneficiaries. This will then be presented to the convention of the academy.

2. The councils are committed to executing the projects listed in the plan within 75% of the funds allocated to the projects approved by the council. The 25% left in the fund is for execution of the projects outside of the plan which is urgent, requested by higher agencies in the state, or for sudden problems. Exemptions are allowed for a limited period of three months to approve projects of a seasonal nature and for those that come under uncontrollable circumstances.

3. The president of the academy is authorized to take necessary actions to prepare the plan and to approve the financial requirements needed for preparation to be deducted from funds allocated for research and activities.

4. On February 23, 1982, the president of the academy invited the chairmen of the specific councils for a meeting to study the necessary actions to carry out the decisions of the council of the academy. The

chairmen showed great understanding of the importance of having their councils prepare the research plan during a reasonable period of time. They recommended that the program and plan of the specific councils include programs for research work in different areas for developing Sinai.

5. The specific councils (eleven) and their offices, departments (46), and committees (21) held meetings which exceeded 400 in number during the period January - September 1982. Time consumed to formulate the five year plan for the specific councils amounted to more than 9000 man/hours, in addition to assigning some individuals and groups the task of preparing the necessary paperwork (check table on page 31).*

6. The president of the academy was careful to attend the first meeting of each specific council when the discussion concerning the five year plan began. The points that he stressed in the meetings can be summarized in the following:

- He pointed out the role of the academy in the following stage is concentrated in the role of the specific councils in solving development problems and in formulating a serious five year research plan that agrees with the goals of the national five year plan according to determined priorities.

- He pointed out that the present policy in Egypt dictates the use of scientific research in development with the necessity of cooperation and coordination between different scientific establishments to arrive at better standards. The structure of the academy guarantees this cooperation and coordination through the sector of scientific communication which includes contact with universities, local government units, and both production and services units.

* Page 27 in translated text.

- He stressed the necessity of cooperation between specific councils regarding commong subjects in order to prevent duplication.

- He emphasized the arrival at the best method for marketing scientific research and for making full use of the results.

- He pointed out the importance of data and the necessity of having a data bank in all fields of science. This will allow all information of one organization to be available to help the decision maker and the researcher.

- To make best use of available scientific grants and agreements and the exchange of experts and training.

- Maintenance of scientific equipment and training technicians to do so.

Specific Council	Meetings					Number of Personnel in the Meetings	Working Man/hours
	The Council	Head Office	Departments	Committees	Total		
Food and Agriculture	9	6	52	27	84	840	2100
Industry	5	5	52	22	84	604	1510
Oil, Energy and Mineral Wealth	-	2	24	13	39	322	805
Health and Medicine	3	14	28	9	53	380	950
Environment	2	6	16	-	25	261	655
Transportation & Communications	6	5	15	1	27	279	700
Construction & Housing	3	5	11	3	22	215	535
New Communities	3	3	8	-	14	196	490
Management & Economic Sciences	3	1	2	-	6	37	95
Social & Population Sciences	4	2	16	-	22	126	315
Basic Sciences	3	7	16	-	26	312	935
	42	56	240	65	403	3572	9090*

*This does not include working hours of personnel preparing working papers and the employees in different specific councils preparing minutes of meetings, conventions, and documentation.

- To pay greater attention to training in different fields.
- To review the development pattern for the Egyptian village.
- To stress solutions for pollution of the environment.

Nine specific councils held their annual conventions. The academy followed a new procedure this year which was having the conventions held in the concerned ministries and agencies which implement the results. The topic of the five year plan for research projects with high priorities was top on their agenda. The presence of the ministers at those conventions had a great effect in directing the meeting towards subjects and research work that needed to be stressed, performed and in determining their requirements. Each convention arrived at decisions and recommendations to be presented at both the annual convention of the academy and at the council of the academy to agree and determine the priorities within the available funds.

The following are the dates and places of those conventions:

- Convention for the specific council for housing and construction research

  Ministry of Housing and Reconstruction, Tuesday, June 15, 1982
- Convention of the specific council for basic science research

  Development Center, Cairo University, Wednesday, June 16, 1982
- Convention of the specific council for food and agricultural research

  International agricultural center, Dokki, Thursday, June 19, 1982

- Convention of the specific council for environmental research

  Nurishment Institute, Sunday, June 20, 1982

- Convention of the specific council for transportation and communication

  Railroad Complex, Ramses, Sunday, June 20, 1982

- Convention of the specific council for industrial research

  Ministry of Industry, Monday, June 21, 1982

- Convention of the specific council for health and medicine research

  Ministry of Industry, Monday, June 21, 1982

- Convention of the specific council for the new communities

  Ministry of Housing and Reconstruction, Tuesday, July 27, 1982

- Convention of the specific council for social sciences and population

  National center for social and criminal research, Tuesday, September 9, 1982.

with the purpose of approving the five year plan reached by the councils.

.. The Five Year Plan - - Its Scope and Philosophy

First: The response to the decision of the council of the academy regarding the formulation of the plan of the specific councils within a five year frame in cooperation with the agencies concerned with implementing the results, is based on some basic ideas, among which are:

- The close connection and ties between scientific research and technology and the development plan with all its economical and social dimensions.

- The familiarization with the scientific content of the issues of production and development.

- The determination of the areas of research which the concerned ministries and agencies list as high priorities in solving either the problems of application or the property of Egyptians.

- The important role expected by the country - while executing an ambitious plan for development and production - from scientific research in treating problems in a practical manner that agrees with local conditions while adopting latest world technology.

- The plan, for the purpose of successful scientific planning, should concentrate on issues that represent the corner stones for building a society that can cope with the challenges of the present day. In particular the following three sides: the Egyptian people; natural resources; and technology.

- To stick to a programmed research plan, to determine the projects according to priorities, to choose the best qualified agencies to perform the research work, to determine the return, and to point out the best manner of applying the results and the agencies to apply these results.

- The participation of scientific organizations, the agencies that apply the results, and the planning agencies in designing a clear research plan with clear goals will guarantee the plan to be practical and possible to execute.

- The academy gives great weight to applied research, and gives a high priority to problems that deal with society, development, and production with all humanitarianism, social and economic dimensions. In addition, the academy emphasises the derivation of practical solutions that are applicable and whose results - when applied - can be put to the service of the people.

- Presenting the results of studies and research in a clear manner for the decision maker.

- To hold scientific seminars that deal with stressing national problems.

Second: To fulfill the goals of forming the academy and to meet its responsibilities in light of its decree of formation, the academy has followed a new course expressing its philosophy in this stage to make the best use of available resources for serious development. This course is summarized as follows:

* Assigning the task of summarizing the projects in the plan issued by the Ministry of Planning in August 1981 to a chosen number of scientists from universities and research institutes who are members of the academy. This summary was to be presented to the specific councils to guide them in formulating their own plans within the national guidelines, choosing their technological activities and formulating their research programs and support or participate in financing.

* The specific councils will prepare - each in its field of specialization - a scientific five year research plan. Their plans will show in detail: program of research, organizations and agencies which are connected

with this field of research, world research guidelines in that area, topics of research that can be applied directly or after modification considering the Egyptian environment and the problems of development and production, and presentation of a scientific solution that can be applied.

* The academy will hold the conventions of the specific councils in the concerned ministries and agencies concerned with application. This will promote coordination, contact, and cooperation of different scientific research institutes and applying agencies at the national level.

* The plan depends on four main axes:

The first axis: Guarantee of the continuation of current research projects that were contracted. This will help by:

* Participation in solving national problems
* Supporting the infrastructure for scientific research, such as:

. Preparing the researcher and scientific cadres in different fields of science and training and developing human resources in different fields

. Participating in furnishing some units (either partially or totally) in research centers.

. Activating some basic research activities in universities and research centers.

The second axis: Financing some national research programs with many different aspects, such as: Sinai development - furnishing potable water - sewers - environment - housing and urban development - medical care - sand dunes - pollution control in the environment - energy in its different forms, etc.

The third axis: Expanding scientific publishing in Egypt and publishing results of research in scientific booklets. Issuing monographs to stress the role of scientific research in solving national problems. Holding scientific seminars in different areas of research on subjects of national importance.

The fourth axis: This includes new projects, some of which are a continuation of the same old subjects, and some are included in the five year research plan for the first time in the following areas:

Resources ano production

- Food and agriculture
- Industry
- Energy
- Mineral wealth

Services

- Health and medicine
- Environment

Infrastructure

- Transportation and communications
- Construction and housing
- New communities

Social and economical development

- Economical
- Society and people

basic sciences:

The philosophy of specific councils in preparing their five year plans and targets can be summarized as follows:

1 - Resources and production:

1/1 Food and Agriculture

Egypt imported food worth about LE 3000 million this year. Food imports will reach, in a span of a few years, about LE 7000 million (at 1981 price level) if the present situation continues. The way to solve this problem is to first answer the questions of: what is the present situation of agriculture in Egypt? Can science improve this situation or not? The problems of the Egyptian agricultural production are basically of resouces, social and technological in nature. This can be summarized in the very small sizes of property which results in scattered fields of the same product, dependence on animals for agricultural processes, the use of primitive means of cultivation, typical of the underdeveloped Egyptian village, and the fixing of prices of agricultural products while the cost has increased. In spite of the fact that land and water resources are limited, the question arises as to whether these resources have been put to the best possible use or not. As a matter of fact, they have not. A comparison should be noted to other countries that used to import grain (such as India which used to import about 17 million tons and now exports it) and other countries in southeast Asia which were on the edge of famine because of a lack of rice products but which now export rice. Science played a great role in increasing the production. The production per feddan increased by using modern technology and making best use of the results of plant growing as had happened in the United States in the 1920's. The development of hybrid maize made a remarkable increase in that product.

Accordingly, the specific council for food and agricultural research in the academy adopted a policy that depends on the following ideas:

. The conformity of the scientific plan to the national plan for development and production.

. The concentration on application of the results of the research and studies to promote plant and animal production.

. The concentration on a few problems with high priority and the ones that give high and quick returns on basic food commodities.

. Attention should be given to the research that is generated through the process of application.

. An integrated team of research workers representing the distinguished departments in the fields of: Ministry of Agriculture, Ministry of Irrigation, Research centers, and universities to perform the research and studies. This is in line with the coordination and integration between scientific research centers and agencies for the execution of results.

. The research plan suggested should be flexible enough to guarantee adaptability to changes in light of results.

- A great interest should be paid to the information side of the issue. Bulletins and booklets should be published. Conventions should be held. Sectorial studies for important issues should be prepared.

. A great deal of importance should be given to feasibility studies.

The academy concentrated its efforts on national efforts to increase the productivity of some products, such as corn and rice through the application of known local and international techniques. This led to doubling corn production. With regard to rice, the academy formulated a program to introduce fast growing types of rice having high yields. It was possible to present two cycles of rice in a span of 160 days, which is equal to one

cycle of local cultivated rice. This results in increasing the production from 200 percent to 300 percent. This means adding about 5.6 million feddan-crop that can be used in increasing the areas cultivated with rice, wheat, beets, corn, beans, lentils and soy beans, which are the basic food commodities.

The research plan included programs and studies in these fields:

- Plant production
- Plant protection
- Agricultural natural resources
- Fish and animal production
- Food and food industries
- Agricultural economics and society development.

The five year research plan aims at the following:

. To put to best use land and water resources and climatic conditions. To increase important field and fruit production.

. To use science as an agricultural energy for production.

. To expand in mechanization.

. To follow the vertical increase in production, and to expand in using hybrid, high yield, and fast growing seeds.

. To concentrate on applying the definite results in the area of producing strategic agricultural products through national effort.

. To study diseases and to design the means to counteract them.

. To keep in mind the integration between plant production and plant protection.

. To study water requirements for different crops in the new valley area and the other reclaimed lands and to compare different irrigation systems.

. To benefit from results of finished projects.

. To put more interest in the application of the results at all levels, including those of the farmer.

. To raise the rate of local animal production and to pay more attention to fish farms and artificial food (to participate in solving the national food shortage).

. To raise the level of nurishment and to make sure the produced food (both local and imported) gets to the customer in good condition with high nurishment value.

. To improve the rural food industrialization to prevent emigration to the cities and to help increase the farmer's income through introduction of some farm industries and environmental industries to the village.

. To improve the quality of Egyptian bread to make it acceptable.

. To check the best period of storage of frozen protein foods imported for human use.

. To integrate rural development.

. To modify the crop pricing policy to meet other changes.

. Agricultural labor.

1/2 Industry

The research plan for the council of research for industry concentrates - through the policy of the academy - on the following major axes:

- To determine the priority of research projects which conform with the requirements of the national plan for development and production - - - especially with the needs of industry which represent a priority to its production. This will be done through the participation of a broad collection of presidents of industrial companies who represent branches of different industries, industrial experts, and specialized scientists

from universities and research centers and the academy.

- To strengthen the ties and to promote greater coordination and integration between agencies of scientific research and those of industry, through participation in projects and research studies to both identify problems facing industrial production and find solutions.

- To have the plan adapt projects with high economic return by:

  . Developing new products using the latest technology.

  . Improving the production quality, or its methods to minimize waste.

  . Using local raw materials.

  . Recycling factory's wastes economically.

  . Replacing imported raw materials with local materials and trying to produce intermediate materials locally or develop local alternatives for them.

- To hold conventions and seminars in which national and international experts will participate to discuss and evaluate the projects (one seminar for each project - suggested total of 25 during the coming three years).

Hence, the research plan covers the following fields:

- Chemical industries
- Metal industries
- Engineering industries
- Electrical and electronic industries
- Spinning and weaving industries
- Construction materials and ceramic industries
- Food industries

Some first priority projects have been determined while the scope of the plan has expanded to cover other areas with great importance to industry. These ideas are being translated to definite projects.

1/3 Energy, oil and mineral wealth:

The policy of the council for oil, energy, and mineral wealth is based on the following:

- To formulate a definite policy to choose the research projects in the fields of oil, energy, and mineral wealth from high priority projects connected to the plan for development and production.
- To tie up between the higher energy council and the specific council in the academy through the technical secretary of the specific council.
- The necessity to cooperate between: the specific councils, the political decision maker, the implementing agencies, and the scientific research centers.
- To hold seminars on topics dealing with vital subjects which serve to reach the gaols of the specific council. Listening to the discussions in these seminars will help the council take the right decision.

Within the aforementioned framework, each of the departments of the specific council (namely, oil, energy, mineral wealth) formulated its own working plan and research plan.

. Energy

Because of the limited sources of energy in Egypt, especially since those sources can be exhausted, such as oil, natural gas, coal, and radio-active materials, the policy of the specific council is outlined as follows:

* To intensify the efforts of exploration of oil, natural gas, coal, and uranium to increase the volume of known reserves of each.

* To rationalize energy consumption.

* To expand in using all available water energy.

* To put more interest in new types of energy, such as solar and wind.

The research plan included research work in the field of energy that aims at:

- Encouraging and supporting "renewable" types of energy.
- Rationalizing the use of energy in five industrial sectors.
- The interchange between sources of energy.

. Oil

Research plan and projects aim at increasing the volume of discoveries of oil in Egypt through the evaluation of oil capabilities. Following are some of the targets of those projects:

* Production: aims at increasing the oil output from the fields at the least possible cost.

* Refining: aims at applying the best techniques for refining oil to meet the demands of the country at the least possible cost at the highest world standards.

* Petrochemicals: aims at modifying production methods and improving the specifications of the products and rationalizing their use.

* Uses: aims at raising the efficiency of using the products and improving the performance of oil products.

* Rationalizing the consumption of oil products and using energy alternatives.

. Mineral Wealth

Minierals are considered important natural wealths of the nation. The country depends on minerals to build its economy with what they furnish of metals and raw materials necessary for many local industries. Mineral wealth represents the foundation needed for industry and development.

The research plan therefore aims at:

- Completing the contracted geological mapping, especially for magnetic fields to cover the Sinai penisula.
- Supporting and continuing the distribution of coal deposit formations in Egypt.
- Searching for mineral deposits.
- Searching for potassium salts and radio-active materials.
- Extracting uranium from phosphates.
- Searching for desert silts and extracting alum from them.
- Performing research on raw materials needed to support the economy.

2. Services

2/1 Health and Medicine

Mankind is the basis for development. He makes it while he is still the aim of development and the collector of its return. Furnishing medical care for Egyptians represents the most important factor in pushing development forward. Human health results from many factors that surround the human, and health improvement is one great factor in total national development.
There is a great closeness between health research and research on environment, transportation, communications, food, agriculture, and between humanitarian, social and economic research. This requires coordination and

integration of work performed by each of the specific councils.

The philosophy and scope of research in the field of health and medicine can be summarized as follows:

- To plan for scientific research in the fields of health and medicine and to assist in the strategy of services with both studies and research work through the responsibility and goals of the academy according to its law.
- To tie between the scientific policy in the fields of health and medicine and that of the Ministry of Health.
- To study the national plan, to choose the important research work with high priorities, and to overcome the problems facing it through solving the health problems that face the Egyptians via scientific research and modern technology.

The constituents of the research plan are as follows:

- Basic research about epedemic diseases to list health priorities (both protection and treatment)
- Nutrition research, aimed at problems of malnutrition. They also aim at analyzing the constituents of Egyptian foods and the needs of the individual which will help lay down a solid nourishment policy.
- Research on diseases of old age.
- Research that aims at solving national health problems and enhances the life of the Egyptian individual, such as Bilharzia, tuberculosis, Asthma, environmental health, eye diseases, heart diseases, diabetes and cancer.
- Research to improve the level of health services.
- Research for health protection.
- Research for emergency services.
- Research for administrative services that aim at:

* Improving the level of services in hospitals and medical establishments and decresing the cost of their performance.

* Modifying medical legislation to cope with medical, social, economic, administrative, and technological changes.

* Improving medical recordings and techniques.

- Research for basic medical sciences which has the following targets:

* Modifying the scope of basic medical sciences in Egypt to guarantee their up-dating to world trends and to have them connected to both clinical and applied sides.

* Studying the effect of reducing the period for studying the basic medical education in universities on the medical students in their clinical stage.

* Improving the manpower working in the medical field and preparing the cadres of research workers and helpers.

* Improving the nursing techniques and preparing the necessary manpower, especially for emergency cases.

- Research for medicine that aims at:

* Developing new medicines from both plant and industrial sources and their clincial uses.

* Improving the efficiency of medicine and determining its manufactoring needs.

* Determining long range consumption of medicine.

* Modifying information system by storing medicine research work to determine what has been done and to prevent duplication.

* Scientific and technological development in the area of medical research and industrial development.

* Furnishing local technology to manufacture products from intermediate, imported resources.

* Rationalizing the use of medicine through studying chemical reactions between medicines and common foods and endemic Egyptian diseases.

* Developing medical constituents from raw materials, wastes, and intermediate products in Egypt.

* Developing milk alternatives in relation to food security.

* Determining the needs of the elderly for both food and medicine in Egypt.

- Medical research for Sinai which includes:

* Preparing a complete medical survey of Sinai, including mapping of diseases, medical services, and health environment in order to prepare for future medical planning for the Sinai.

* Studying plants in Sinai that are used in manufacturing medicine and means of growing them.

* Estimating the percentage of flourine in the drinking water to check the disease of spotty teeth.

* To study injuries associated with mining industries in Sinai.

* Checking the medical emergency services in Sinai to make it possible to develop the best plan for the services for residents, visitors and tourists to the area.

* Surveying poisonous sources in Sinai with the purpose of furnishing emergency vaccines and medicines against them.

* Performing research for developing, folloiwng, and introducing new technology for improving scientific research in the area of medicine (research for medical engineering and application of radiation technology).

* Improving dental services (problems of increasing amount of treatment needed on teeth in Egypt).

* Performing research to evaluate children's vaccines.

- To hold scientific seminars in different fields. In addition to:
  * Following up and evaluating continuing projects.
  * Evaluating the results of projects that ended and determining the manner of advertizing them and introducing them to the concerned agencies for application.

3/2 Environment

The environment is where human beings live and perform their social and production activities. It is also the store for resources and all renewable sources of wealth (such as cultivation, grazing, hunting, and fishing, forestry), and sources for non renewable wealth (metals - oil - underground water). These resources include land with what it contains in minerals, water in the oceans and rivers and underground, air, climate, wind and gases. All of these are subject to change with time, both in quantity and quality, according to economic activities. Therefore, the relation between man and environment has two sides:

. Environment is the place where man lives and it should be protected from pollution and from whatever harms man.

. Environment is the source of wealth and production. Therefore, man should rationalize the use of natural resources, develop them, and maintain the capacity of environment to furnish and produce.

This environmental balance cannot be achieved except through three main bases: the scientific base, the social base, and the legislative base

Egypt has lately been interested in forming a national organization for environment with a national program for research and study about the relation between the Egyptian and his environment, and his use of its resources for production and development. This is one of the main jobs

for the academy of scientific research and technology carried on by the specific council for research on environment.

The five year research plan on environment is made up of three sectorial directions (vertical) which are: protection of the environment from pollution; health; and natural resources. The five directions (horizontal) which are connected to each sector are: education and training; models and systems; environmental legislation; social studies; and economical studies.

- It is important to point out that the five year research plan for environment covers the shortages of the current programs. The plan does not, however, constitute an independent national program in the field of environment. Rather, it is an entrance to a national program in that area being prepared with the coordination of the academy, as represented by the specific council for environmental research and other current research. Hence, an integrated national program for research for the environment will come out from elements of research financed by both the academy and other authorities.

- The main directions of the plan are as follows:

. To direct attention to the different problems of environment and to present a clear picture to the decision makers.

. To call for environmental consciousness in different scientific and popular medias.

. To participate in laying the foundations for national organization for environment.

. To study the adverse effects of development projects and to limit or prevent them.

. To treat the present environmental problems in a practical manner that agrees with our local circumstances and is within available resources.

. To formulate a research policy that serves the development plan and requirements of the era.

. To support the scientific research in both production and services sectors.

. To give first priority to research work dealing with problems of both society and environment while putting the results at the service of society.

. To present scientific and practical solutions that can be both applied and can hasten the development process, without exhausting resources or polluting the environment.

. To prepare maps for natural resources and design the style of both developing and using them.

. To pay attention to the national environmental legislation.

. To implement the suggested goals of the plan, including the following:

* Research in protecting the environment from pollution:
  . Technology for treating drinking water
  . Technology for treating liquid industrial wastes
  . The re-use of water for agricultural purposes.
  . Air pollution.
* Vocational Health Research
  . Vocational diseases in industrial areas which differ both in geographic locations and industrial nature.
  . To raise the standards of performance and increase production by studying labor versus human effort in the industrial field.
  . To track the changes in blood enzymes that are affected by pollution and pesticides.

. To survey the vocational dangers in different industries on the national level.

* Research on natural resources:

. To map the environmental capacities of natural resources.

. To evaluate the deterioration of irrigated land connected with factors of soil pollution.

. To form the national network for natural protection.

. To form the national bank for known natural resources.

.

* Research on environmental education:

. To support and improve courses for environmental education in different stages.

. To prepare research programs in the area of mathematical models, data, economy, environmental legislation, and social studies connected with environment.

The council's duty, in addition to the plan, includes the following:

. To prepare a review of all the studies performed in Egypt about "handling of solid wastes - garbage" which will be the basis for a national research program in that area.

. To prepare a national research plan about sand dunes and deserts in light of the Qattara depression project.

. To prepare a study about national legislation concerning the effect of the development project on the environment.

3. Infrastructure

3/1 Transportation and Communications:

The sector of transportation and communications is considered one of the important sectors in supporting the basic structure of society. This sector aims at furnishing the services of both transportation and communications quickly and at a high efficiency and a reasonable cost, in order to meet the economic and social demands of society. Since transportation and communications represent one of the principal problems from which society suffers, the nation is working very hard to decrease the burden of the problem with the hope of solving it completely within a reasonable amount of time. Therefore, the research plan in that sector aims:

- To participate in solving the problems of that sector in the areas of national transport (railroads - highways - waterways - and national air ways), international transport (air and sea), and communications (wire service - wireless service - and mail).
- To participate in solving the problems of transportation in all of its fields (such as freight transport and port congestion) to meet the needs of the social and economical development and the needs of the increased population.

The plan aims at coordinating and tying the specific council for transportation and communications research and the benefiting agencies on the national level. Also, to continue research on on-going projects that have their first stages completed, and to determine the best policy for implementation and the agencies to perform them.

3/2 Construction and housing

Construction represents one of the basic elements of national investment. It is the principal element in the housing, utilities, investment projects. It has been, in so many incidents, the bottleneck for production execution. In addition, feasibility studies on those projects depends completely on the cost of construction, period of construction, and the efficiency of personnel performing it.

The housing problem became one of the principal problems that Egyptians suffer. The nation is working hard to ease its burden and hopefully, abolish it within an acceptable period of time.
Therefore, the commitment to using the results of scientific research - is basic to help execute national projects at a desired level of efficiency.

In order to fulfill that, the research plan for construction and housing included the following important research projects:

- Rural housing and rural development planning for the village.
- Urban housing.

This includes such vital issues as desert architecture, house planning and design, the groupings of houses, use of solar energy for houses, and presenting the scientific basis for it, improving the level of economic housing, social and architectural studies aimed at furnishing the actual needs of the Egyptian family in designing both the inside and outside areas of different urban housing units.

- Potable water (to perform both technical and medical surveys for the present treatment of water for the purpose of upgrading them to the required medical and economic levels), and to benefit efficiently from the treated water of the Nile.

- The technology of treating underground water in Egypt to remove iron and manganese from it to obtain a better quality of water.

- Waters of sanitary drainage (to perform both technical and medical surveys for the present sanitary drainage waters, to improve the manner of treatment via oxidizing ponds, and to study the possible effects on pipes in both the drainage pipe network and pipes inside homes).

- Construction materials. (aims at furnishing materials for rural housing units to solve the problem of scraping the top soil of agricultural land, research about red brick alternatives, research and studies about special types of concrete with certain characteristics that suit different local conditions and environments, research and studies about the use of resins in producing concrete and building units and the economy of those materials and research to modify the use of mortar in buildings.

- To study preserving houses against termites.

- Economics of construction:

. To prepare the specifications for design and execution of concrete structures, and metal structures according to up-to-date world standards.

. To prepare the specifications for design and conditions for executing the foundations and to study effect of salts on the foundations in different geographic locations and in different environments.

. To study the most suitable erection methods and their economy.

. To study maintenance of present structures and methods of correcting the structural defects, and to minimize the risk of sudden collapse of structures to minimize human fatalities by improving the capacity of present executed structures.

. To perform a comprehensive study to evaluate conditions for erection of pre-fabricated concrete structures and modifying them according to our local conditions.

. To study the problems of construction management for projects in Egypt, especially in regard to types of contracts in order to be able to choose the most suitable contract.

- Urban planning:

. To preserve the architectural heritage of certain zones in Cairo through suitable urban planning - to study the problems of: traffic and parking in Cairo, efficiency of management of big cities, evaluation of different suburbs, broad features of Egyptian cities through the year 2000, and the probability of expansion of those cities into the neighboring desert.

. To formulate the basis and rates for different planning levels, especially for urban areas and new communities.

Also the plan did not exclude: publishing of bulletins - simplified in order to acquaint personnel working in this area with the most up-to-date techniques in planning, follow-up, and feasibility studies in construction projects.

3/3 New Communities

The academy formed a specific council for research for new communities which includes a collection of distinguished scientists from the Ministry of Housing and Reconstruction, and scientists specialized in social and ecnomical research work to carry out the goal of the policy of cooperation between agencies of scientific research and agencies for execution. The specific council will carry on research in the following areas:

* To encourage settlement
* To use natural resources
* To study architectural environment in the new communities.

The five year plan included research programs on many issues along the following three main axes:

. Environment:

* To estimate the volume of the new community when first established and to study its economy with the goal of tying up production factors and the factor of services.

* To determine the basis of choice of the new urban communities.

* To take into consideration the demands made by environment so that the architect can preserve it.

* To preserve the urban heritage in Egypt through integrated renewal and replacement of the old suburbs having historical value.

. Resources:

* To use new types of energy - and renewable types of energy - in the new cities and communities.

* To determine the basis and conditions of executing pipe networks for both water lines and sewers.

* To choose construction materials and to determine the style of construction in the new communities.

* To study goals and methods of industrialization in the new communities with the target of developing those communities.

. Humanities: including settling and managing the new communities. Therefore, the research plan followed - as a target - the following main directions:

* To strengthen connections between agencies of the Ministry of Housing and New Communities on one side, and universities and research centers on the other side.

* To survey and evaluate studies and research work carried out before and to derive conclusions that will be adapted in planning the new communities.

* To execute the new communities and to develop them in an integrated economic fashion, to use all available human and material resources adapting new policies, and making use of modern technology to fulfill both the development and production targets.

* To plan for the development of the new communities in stages.

* To study both the developing measures and the protecting measures for the new communities in different areas.

* To carry on applied research in the new communities, and study problems raised by them.

4. Social and economic development:

4/1 Research for economic and management sciences.

Concerning the economic sciences, the economic problems that Egypt faced for several years are difficult, stressing, continuous, and mixed. Some of these problems are due to internal factors, whereas others are due to external factors.

Adapting certain economic policies results in an inflationary environment which is always accompanied by social and economic features that are extremely dangerous. Those features are reflected in the budget, balance of payments, burden of foreign debts, and the burden of servicing these debts. This is in addition to partial unemployment, idle capacities (to protect them from high prices), hard currency bottlenecks, and the decrease in the net economic return for some public projects.

The procedure followed to correct the economic path always leads to increasing the problem which grows even bigger because of the world recession, accompanied by inflationary recession.

The plan for the council aims at performing studies and research, such as:

- To clarify the problems with the aim of taking the right decisions to correct the economic path which should lead to economic development without either inflation or unemployment. Clarifying the problems can also lead to recommendations to be followed in a challenging world, which is changing continuously.

* To investigate the real causes behind these problems without interference from: the political ideology, passion, easy temptation of increasing public expenditure, and temporary solutions in light of inflation.

Concerning management sciences, the agency for management in Egypt received a major part of the attention of researchers to point out reasons for its inefficiency and how to overcome it. Different agencies of the country have performed studies and have held conventions to explain the dimensions of the management problem in Egypt and how to solve it. The plan for the council for management and economic research is directed towards performing serious studies on stressing subjects that are important to the nation's future whether in the public sector or the governmental agencies whose number of employees is increasing. This will result - possibly - in a rigid application of rules on the management sector to perform the tasks required by the positions in the government, whether at the central or local level.

4/2 Social research and the population: Not Family Planning!

As a response to the fact that social sciences play a great role - in addition to being very important - in the process of national development, and due to the human need for services to keep moving into newly developed eras, the council for social services and polulation research put a five year research plan for research fields connected to social and population activies which agrees with developmental issues and with the academy's course of action.

The plan aims at the following:

- Concentrating on research work and studies in the areas that treat vital present issues and future issues, especially the ones affecting the present stage.
- Determining research areas that deal with the general picture of society.
- Determining areas of research for social development while giving priorities to both basic social and applied research for stressing problems related to the development plan.
- Evaluating scientific data to serve planning goals.
- Following up world progress in the area of social science and courses of research work by participating in different world conventions for social matters.

The manner of operating for the council will be as follows during the five years:

- Holding scientific seminars at the end of each research work to discuss the results and how to benefit from them.

- Organizing international conventions to discuss issues of vital importance in different fields.
- Organizing some study sessions for personnel working in the social field to promote awareness of up-to-date trends.
- Notarization and participation in creating a national notarizing center.

Following are the important issues and subjects of the plan.

- Legal science:
  . Social justice in the national policy for both education and health.
  . Style and method for legal aid to the poor.
- Population research and studies:
  . Atlas for population in Egypt
  . Sinai population
  . Redistribution of population in Egypt as a principal target of the national strategic policy of population.
- Educational research:
  . Evaluation survey of both educational and psychological research - with the aim of drawing a map for them - which will benefit research in both.
  . Evaluation survey to help plan and expand basic education.
  . Planning the policy of building schools for different educational stages.
  . Education in different stages and development requirements.
  . Modification of technical education courses in Egypt.

. Abolishing illiteracy.

. Planning for developing the working force in Egypt.

. Guiding the cultural programs planned to direct youth to the desired social change.

. Technology and adopting it in Egypt.

. Social problems of infancy.

. Religious education in Egypt and modifying its style to fulfill religious-social targets.

. Social and educational development for the new communities.

- Development and social sciences:

. Evaluating research to identify new circumstances, needs and problems.

. Surveying research to identify efforts exercised to meet the needs of the people.

. Forecasting research to determine the future configuration of Egyptian society in order to help planners in their efforts.

. Research for new societies with concentration on demographic characteristics and social relations and problems.

. Family (women - youth - infants - elderly and social help)

. Social map

. Social policy

. Social activities of scientific and technological research in Egypt.

. Technology and social change.

- Basic sciences

Basic sciences played a great role in the progress of humanity in the fields of chemistry - physics - mathematics - astronomy - biology - geology - and environment. To a great extent, basic sciences modify the way people live. They have had a great role in progress since the industrial revolution. Many of the applied sciences, such as engineering, agriculture, and medicine depend on the basic sciences. Industrial and technological progress achieved in the last few decades of this century and climaxed by the invasion of space, depended mainly on the basic sciences and their research and application. The great interest that the academy has - represented by the specific council for basic sciences research in the building of the Egypt of tomorrow; the interest scientists and research workers in universities and scientific centers in the basic sciences as the basis for technological and scientific progress; and the necessity to coordinate and cooperate between the academy - represented by its specific council - and different scientific agencies in the universities and research centers and ministries, especially the basic science sector of the higher council of universities - to best serve the problems of society and national development plan. Due to all of these facts, the main directions of the five year plan for basic science research are as follows:

- To encourage and to support projects and research work with first priorities in basic sciences that will both coordinate between and serve the issues of society, development, and national economy.
- To pay attention to new branches of science and to prepare scientific cadres for these branches. To participate in research projects in new areas as a support for the human efforts necessary for development plans.

- To participate in forming institutes and new national research units, such as: the national center for earthquake research; the national program for research on medical plants, etc. to perform studies concerned with forming some specialized institutes and national centers with the required feasibility studies.

- To support research laboratories in some centers and units of scientific research and to participate in both furnishing and supporting them as a means for encouraging basic research in universities and research centers.

Chapter Two

Research Projects

First: New Projects

Area of Resources and Production

1 - Food and Agriculture

1/1 National campaign to improve some oil producing crops (soybeans, sunflowers, peanuts, and safflower)

Goal: To improve production of the above mentioned crops to increase locally produced oil in order to decrease the gap between production and consumption and to introduce these crops into the Egyptian agricultural crop rotation cycle.

Elements of study:

1. To evaluate the productivity of different oil producing crops to choose the ones with short seasons, high yields, and whose seeds contain a high percentage of oil.

2. To choose the best agricultural coefficients that lead to high production, expecially in new reclaimed land.

3. To choose different suitable crop rotation cycles for soybeans or sunflowers.

4. To organize national campaings to promote some oil seed crops and to formulate programs that include the best qualities and most suitable agricultural coefficients to apply in the governorates.

Estimated Budget and Period for the project: LE 1 Million - 60 months (E.B.A.P.)

Specifical Council (or councils) Concerned: Food and Agriculture (SP.C.C.)

1/2 To improve the production of sugar beets:

Goal: To improve the production of sugar from beets to decrease the gap between consumption and production and to meet the increasing demand and to decrease the amounts imported.

Study elements:

1. To increase local production of sugar beets.
2. To evaluate different kinds of sugar beets to choose the most suitable.
3. To derive the most suitable agricultural coefficients leading to the highest possible production in different areas, and to improve the resistance of the crop to local conditions.
4. To perform experiments as to producing the seeds locally, instead of importing them.
5. To study the crop rotation for cultivating sugar beets to choose the best rotation with high economical yield and to avoid sugar beet diseases.
6. To evaluate the nurishment value of the waste from sugar beets to be used for fodder to help animal production.

E.B.A.P.: LE 300,000 - 36 months.

S P.C.C.: Food and Agriculture.

1/3 Production of potato seeds in Egypt

Goal: To limit cultivation to the best qualities of potatoes and to expand in producing their seeds locally so that no need arises to import less quality seeds with low productivity.

To abolish completely the exemptions - allowed in some years - to use infected tubers.

To furnish seeds in sufficient quantities at the right time. This will result in increasing production and creating a better chance for export at a better price.

To avoid the problems of maritime transport, port congestion, and inland transport.

To furnish a suitable amount of foreign currency to be allocated for importing seeds. The amount of foreign currency should not exceed what is actually needed so that excess funds can be used in other economic fields.

To decrease production cost by at least the difference between prices of imported seeds and those produced locally, which amounts to an average of no less than LE 150 per ton.

To increase the potato production by about 2 tons per feddan which gives a total of about 160,000 tons annually valued at about LE 16 million.

Elements of study:

1. To study the possibility of producing seeds and tubers locally, packaging them, and storing them in refrigerators until the cultivation time in the summer of 1982/83.

2. To form an agency that determines the areas suitable for cultivation while comparing them with imported seeds (in each area). To follow up technically those areas after determining a detailed program on the most suitable production procedure.

3. To encourage farmers who will cultivate those seeds by decreasing the price of seeds produced locally at least LE 50 per ton.

4. To evaluate the results of the experiment as to: production, time of cultivation, period the crop is in the ground, qualities, suitability for export, and the economics of production from all sides.

1/4 Studies on diseases which attack onions, both in the field and in storage.

Goal: To perform the necessary studies to counteract the diseases of onions, such as the smut, pink root rot, purple blotch, downy mildew, and white rot which cause great losses. This should lead to greater productivity and better quality.

Elements of study:

1. To increase the effectiveness of treatment for the white rot disease under field conditions, and the treatment of pink root rot. To use solar energy in getting rid of lime textures and bacteria in the soil.

2. To perform studies on chemical treatment for onion diseases that attack the plant in both the nursery and the field.

3. To study the effect of agricultural coefficients on the diseases that hit the crop during storage. Coefficients such as (Nitrogen phosphate fertilizer - irrigation - harvesting time - and scalding.)

4. To study the best conditions for storage.

E.B.A.P.: LE 124,000 - 48 months

S P.C.C.: Food and agriculture

1/5 Studies on diseases that attack sugar beets in Egypt.

Goal: to increase the productivity of sugar beets under local conditions by treating the diseases and pests that attack the crop, either during growth or during storage, besides limiting the adverse effect of the Nematodes that exist in the Egyptian environment.

Elements of study:

1. To diagnose the Hematoda pests in Egypt.

2. To test the resistability of sugar beets to different kinds of Nematoda.

3. To study the effect of agricultural coefficients (crop rotation - fertilizer - pesticides) to reach the most successful combination of raising the productivity of feddans economically.

4. To formulate an integrated treating program that includes types of sugarbeets, fertilizer rates, and pesticide rates.

E.B.A.P.: LE 170,000 - 48 months

SP.C.C.: Food and Agriculture

1/6 Studies on cotton pests (cotton that grows fully in a shorter time)

Goal: to formulate the scientific basis to counteract the effect of pests that attack different kinds of short seasoned cotton and to determine the susceptibility of those cottons to the attack.

Elements of Study:

1. To check the extent to which cotton will be attacked - at the new date of cultivation - to different pests which include:

a. Seedling stage pests, such as aphids, thrips, red spider, and knawing worm.

b. Mid season pests, such as cotton leaf worm, green worm, and American bollworry worm.

c. End of season pests such as pink bollworry worm and needle bollworry worm.

2. To plan treating the effect of those pests as in the case with cotton cultivated in the regular time.

E.B.A.P.: LE 50,000 - 36 months

SP.C.C.: Food and Agriculture

1/7 Banana problem in Egypt

Goal: To study the problems of bananas in Egypt in order to plan increasing productivity.

Elements of Study:

1. A complete survey of banana pests and diseases in different geographical locations in Egypt.

2. To determine areas that can be saved while removing the areas that have no hope of responding to treatment to abolish sources of diseases.

3. To cultivate new types of bananas in the areas that are continuously infected.

4. To protect the new planted areas from attacks by pests and diseases.

5. To expand in new types and to replace the old ones.

6. To encourage banana cultivation

E.B.A.P.: LE 50,000 - 60 months.

SP.C.C.: Food and Agriculture

1/8 Diseases that Attack Oil crops

(sunflower, peanuts, sesame seeds, soybeans)

Goal: To limit the adverse effect of diseases that attack oil crops, especially fungus that attacks the green part of the plant, such as rusting, leaf spotting, and root rotting. This aims at increasing the production of oil necessary for local consumption.

Elements of the Study:

1. To survey thoroughly fungus diseases for both the green part and the roots.

2. To isolate fungus associated with those diseases.

3. To find the best way to treat the fungus in both the field and greenhouse.

4. To determine the most suitable agricultural coefficients (fertilizer, irrigation, spacing, hoeing)

5. To test the resistability of crops to attack.

E.B.A.P.: LE 170,000 - 48 months

SP.C.C.: Food and agriculture.

1/9 To survey and categorize different agricultural pests in Sinai (insects, acaross, and plant diseases):

To survey and categorize different pests (insect, acaross, and plant diseases) that attack different crops, fruits, and medical plants. To check the ones that appeared recently and their degree of spreading while checking the status of the registered diseases after the change in environment that Sinai has undergone in the past few years.

Elements of study:

1. To survey all agricultural diseases and pests that hit and attack different crops, fruits, and medical plants in the Sinai Penisula.
2. To determine the "new"pests that were not registered before in Sinai and to determine how dangerous they are and the extent of their spreading.
3. To determine the extent of spreading of the registered pests and diseases.
4. To survey the existing predators of pests and their role in natural control.

E.B.A.P.: LE 750,000 - 60 months

SP.C.C.: Food and Agriculture

1/10 Study on the dormant stage of the pink boll worm.

Goal: To determine the different conditions that affect the life cycle of one generation of the worm and how some end their life cycle in October and November (these do not attack the cotton in the next season), while some stay dormant in the seed of the dried bool worm and come out in April and May in time to attack the cotton.

Elements of study:

1. A detailed chemical, biochemical, toxicological and physiological study to different between the two types of worms mentioned above.

2. To try to have the worms of the same generation end their life cycle in October and November which consequently protects the new cotton.

3. To artificially grow the bollworry worm to have large numbers of the different stages of the life cycle of the worm to determine their effect in different environment.

4. To obtain different field insects from infected cotton and put them in greenhouses in which cotton is cultivated.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: Food and Agriculture

1/11 To study the water requirements for different crops in both the valley and the new reclaimed areas together with comparing different and new irrigation techniques.

Goal: To determine the field water requirements for conventional crops in different parts of Egypt and to study the effect of different agricultural factors.

To study the field water requirements for crops that are cultivated (and also are suited to) desert areas.

To perform a technical and economic study for the different irrigation methods and to evaluate their use in new reclaimed areas.

To perform technical and economic comparisons between conventional irrigation methods and the new ones in all types of land. To study the problems of operation and maintenance and to solve these problems.

To study the effect in increase of salt percentage in irrigation water on the water requirements

Elements of study: Will be carried out in two stages:

The first stage: which will take a year in which research performed will be collected and analysed and the studies for the next stage will be formulated.

The second stage: Its period is four years. The following will be carried out:

- To perform chemical analysis for the soil sites before and after each crop.
- To perform analysis in both irrigation and drainage waters after each irrigation cycle, and routine analysis - during the year - of the underground water.
- To collect and register both climatic and mineralogical data necessary for the study.
- To study different water requirements for crops under different irrigation systems.
- To study the long range effect of different irrigation systems on the quality of producing soil.
- To determine different natural soil properties at the sites of the study.
- To compare both technically and economically between different irrigation systems (conventional and recent).
- To formulate a program for distribution of irrigation water in different governorates that suits the different water requirements for crops.
- To derive an equation to calculate both the water requirements and water consumption in light of local conditions and Egyptian environment.

E.B.A.P.: LE 500,000 - 60 months

SP.C.C.: Food and Agriculture

1/12 To study reasons behind deterioration of Egyptian Soil

Goal: to follow the changes in percentage of salt in soil and underground water for the Delta, between Damietta branch and Rosetta branch of the Nile, to furnish the required data for current projects and finished products, such as the sub-soil drainage system, improving soil characteristics, and land maintenance and to follow up and evaluate those projects within the areas under consideration.

Elements of study:

1. To divide the area (Delta) which is about 2 million feddans, into a grid (both longitudinal and horizontal lines). The spots where soil profiles will be taken will be distributed over the grid. The basis for the distribution will be detailed soil classification maps that were done according to a previous study.

2. The soil excavation will be done to a depth of 150 cms or to the underground water table. Soil sampes will be taken according to the changes and water samples will be taken (in sections where water appears) Water and soil samples will be analysed to determine the condition of salts in the samples.

3. To add to the results the data furnished by data collecting stations that are located within the area of the project.

E.B.A.P.: LE 150,000 - 36 months

SP.C.C.: Food and Agriculture

1/13 Management of calcareous soils:

Goal: To improve the ability of soil to hold water.

To improve the soil structure via agricultural coefficients.

To solve the problem of salinity of soil.

To increase productivity by adding the elements which are scarce in the soil.

Elements of study:

To draw a detailed salinity map for the Maryout area and to compare it with the maps that were done before cultivation.

To estimate the productivity of this type of soil for different crops and the relation of productivity to the different soil characteristics (depth of layer - salinity - and the adopted agricultural policy), and to determine the best use of the different soil types.

To perform some applied research for different crops in the Maryout Station under different agricultural policies and to determine the best agricultural coefficients to be applied and the most suitable crops to be cultivated This will develop Maryout station to be a leading station in the field of cultivating calcareous soils in a span of five years. The results expected include: the best fertilizer coefficient, best means to treat hardening of the surface, how to best maintain those soils while controlling the salinity, best size area for basins to control the distribution of humidity, best suitable crops and fruits for these types of soils, and the crop rotation pattern.

E.B.A.P.: LE 423,000 - 60 months

SP.C.C.: Food and Agriculture.

1/14 The National program for improving both meat and milk production of Egyptian Buffalo

1/14 A: Project for improving the genes of Egyptian buffalo:

Goal: To increase production of both milk and meat of the Egyptian

Elements of the Study:

1. To evaluate the performance of buffalo in Egyptian rural conditions
2. To evaluate the response to improving the buffalo genes, both on the governmental farms and with farmers in their own environment.
3. To estimate the relation between the economic standards of the farmers and the production (meat and milk) of their animals.
4. To measure the producing efficiency of the animal under village conditions
5. To approve the basic system which the project recommends for furnishing studs on the national level.

E.B.A.P.: LE 350,000 - 60 months

SP.C.C.: Food and Agriculture

1/14B: Improving the fertility efficiency of the male buffalo

Elements of study:

To evaluate the fertility effectiveness of male buffalo

To evaluate the characteristics of the sperm (both biological and chemical) and the possibility of freezing and storing it.

To expand the use of improved studs that were previously tested.

E.B.A.P.: LE 168,000 - 60 months

SP.C.C.: Food and Agriculture.

1/14C: Cytological characteristics of Egyptian buffalo

Goal: To improve fertility through the use of cytological characteristics.

Elements of Study:

To perform the routine examination of both blood cells and sperm of Egyptian buffalo and to determine any alterations in chromosomes.

E.B.A.P.: LE 70,000 - 60 months

SP.C.C.: Food and agriculture

1/14 The national program to improve production of both milk and meat of cows

Goal: To improve production of milk and meat of cows

Elements of study:

1. To perform processes of crossing the genes of proven animals - which suit local conditions - with local animals
2. To evaluate the crossing process for Egyptian circumstances
3. To improve environmental conditions for the mixed herds.

E.B.A.P.: LE 110,000 - 60 months

SP.C.C: Food and Agriculture

1/15 The national program to improve raising baby male animals through early weaning and the use of local alternatives to milk and to form a research center to apply use of milk alternatives.

Goal: To develop local conditions for production of milk alternatives for feeding baby animals.

Elements of study:

- To continue studies with producing economical alternatives.
- To develop the capacities of the farm attached to the research center to become an advising model besides being a research center where technicians and workers receive their training. The capacity of the center to produce milk alternatives - for feeding baby animals - should be increased to meet the increased demand when the alternative is put to use.

E.B.A.P.: LE 194,000 - 60 months

SP.C.C.: Food and Agriculture

1/16 The national program for nourishment and improving the Egyptian village.

1/16A: Project of increasing the nourishment value for fodder materials

Goal: To participate in treating food problems in Egypt and shortages in general by raising the nourishment value for agricultural wastes vertically.

Elements of study:

- To survey all possible wastes and what can be collected.
- To continue the research on advanced methods of treating the waste chemically and to check their nourishment values.
- To compare the effect of liquid ammonia treatment with urea only as a means for increasing the protein coefficient of the fodder material which is poor in protein.
- To use non protein azote components that would increase the capacity of waste for treatments
- To complete the physiological and micro studies through applied tests.
- To complete the studies on a simple experimental farm applicable to the village

E.B.A.P.: LE 208,000 - 6o months

SP.C.C.: Food and Agriculture

1/16B Increasing the productivity of feddan from green fodder (digestible food for animals)

Goal:

To study the means of increasing the greed fodder (digestible food for animals) per feddan by applying the modern agricultural methods, to evaluate the response of the different crops to those different methods, and to test the production of new fodder and new grazing plants.

Elements of Study:

To study expansion in the production of silage during the periods of abundance of fodder in order to used it during the period of dry fodder which lasts for six months, approximately. (Silage is greed fodder preserved in a silo.)

To evaluate the feasibility of seedlings in water under either natural conditions or adjusted conditions.

To evaluate the produced crops from two points of view: the production and the nourishment value.

To evaluate the project economically. In other words, the economical return from using successful crops in feeding sheep - meat animals (male cows and buffaloes) - and milk-producing animals.

E.B.A.P.: LE 171,600 - 36 months

SP.C.C.: Food and Agriculture.

E.B.A.P.: LE 171,600 - 36 months

SP.C.C.: Food and Agriculture

1/16 C Integrated fodders for agricultural animals

Goal: To increase amounts of fodder available annually for herds to improve their nourishment standards and consequently their production

Elements of study:

- To improve the nourishment value of the groups of fodder used now in Egypt
- To perform applied research on how to best use agricultural waste and agro-industrial wastes for feeding animals and the feasibility of directing these resources to feeding animals.
- To formulate different types of manufactured fodder for the purpose of production
- To perform feasibility studies on the economics of production.
- To formulate different types of manufactured fodder for different purposes of animal raising.

E.B.A.P.: LE 211,000 - 60 months

SP.C.C.: Food and Agriculture

1/17 Expanded production of herds of local sheep

Goal: To execute the results of the project of expanded production of herds in some districts (markaz) in some governorates, especially by increasing the number of annual births and by distributing first generation Finnish studs over local herds. This will produce local firm herds with the high birth rates of twins.

E.B.A.P.: LE 399,000 - 60 months

SP.C.C.: Food and Agriculture

1/18 National program to treat diseases that attach sheep and goats

1/18 A Treating different parasitic diseases

Goal: To decrease percentage of deaths, to increase rate of growth, to increase weight - milk production - and fertility, and to improve quality of wool.

E.B.A.P.: LE 99,330 - 60 months

SP.C.C.: Food and Agriculture

1/18 B: Treating viral, bacterial, and non-microbic diseases

Goal: To continue with applying results of former research and to determine through research data infected areas.

E.B.A.P.: LE 138,250 - 60 months

SP.C.C.: Food and Agriculture

1/19 Improve milk production of local goats

Goal: To evaluate the productivity of goats and to study methods of improvement suitable to desert conditions

E.B.A.P.: LE 99,550 - 60 months

SP.C.C.: Food and Agriculture

1/20 National project for production of economical fodder mixtures for poultry and treatment for bacterial diseases of poultry in Egypt

Goal: To produce fodder mixes with high efficiency for different kinds of poultry - using local resources. The resources should be used efficiently in order to reduce the cost to the most economical level. The project also aims at producing protein concentrates from local resources.

To study the bacterial diseases in poultry, to study the causes of diseases, their degree of spreading at the national level, methods of identifying both in the lab and in the field, and methods of treatment under Egyptian environmental conditions.

E.B.A.P.: LE 200,000 - 36 months

SP.C.C.: Food and Agriculture

1/21 Improving productivity of rabbits

Goal: To develop a commercial species of rabbit suitable to the Egyptian environment.

To study diseases that attack rabbits, and methods of treating and controlling those diseases.

E.B.A.P.: LE 100,000 - 36 months

SP.C.C.: Food and Agriculture

1/22 To construct disease free poultry farms

Goal: To construct a poultry farm center free of all disease causing agents and also using the protecting vaccinations to serve all poultry forms that will be used as research centers for poultry. The poultry farm center will also manufacture vaccines to be used to give the poultry immunity against viral diseases.

E.B.A.P.: LE 50,000 and Academy participation

SP.C.C.: Food and Agriculture

1/23 To produce parents of chickens for both eggs and meat in Egypt.

Goal: To produce different kinds of purebred chicken and to study the degree that they adopt to Egyptian environment, to prescribe the care and health procedures necessary to perform the necessary gene mixing

either hexagonally or octagonally to produce the best commercial types for each production type (meat or eggs).

E.B.A.P.: LE 1,666,000 - 60 months

SP.C.C.: Food and Agriculture

1/24 National program for evaluation of fish volume available in Egyptian waters.

1/24 A To estimate fishing capacity and organization of fishing areas in the Bardaweel Lake and the feasibility of cultivating it with fish.

Goal:

To establish the production of the lake

To estimate fishing capacity in the lake

To organize fishing areas

E.B.A.P.: LE 200,000 - 48 months

SP.C.C.: Food and Agriculture

1/24B To estimate fishing capacity and organization of fishing areas in the Gulf of Suez

Goal:

To establish the production of the Gulf

To estimate the fishing capacity in the Gulf

To study pollution effect on the productivity of the Gulg

To train a group that will be capable of estimating fishing capacity in the future.

E.P.A.B.: LE 175,000 - 36 months

SP.C.C.: Food and Agriculture

1/24 C To estimate the fishing capacity in Lake Nasser

Goal: To study the fishing capacity in Lake Nasser under present circumstances - after about 20 years of existence -.

E.B.A.P.: LE 75,000 - 36 months

SP.C.C.: Food and Agriculture

1/25 To list ponds and non-reclaimed land that can be transferred into fish farms

Goal: To list ponds and non-reclaimed lands - on the national level - that can be transferred into fish farms and to determine their locations and areas.

To determine the best fishing policy to be adopted in those areas.

E.B.A.P.: LE 175,000 - 60 months

SP.C.C.: Food and Agriculture

1/26 To evaluate present fishing professions and the possibility of introducing new methods and new equipment.

Goal: To survey and evaluate present fishing professions with methods (both legal and illegal) and equipment used in the Mediterranean Gulf of Suez, the lakes and the Nile. To describe each method, including equipment used in that method, together with the production.

To evaluate and hence replace, if necessary, the methods with low production.

The change of methods should fit the changes in the environment of water areas in order to achieve the best use, while not affecting the future fishing capacity.

To introduce new fishing methods that aim at decreasing the efforts exerted while increasing production.

E.B.A.P.: LE 100,000 - 36 months

SP.C.C.: Food and Agriculture

1/27 To study fishing capacity and fishing areas of the Nile

Goal: To identify the types of fish in the Nile and the environment surrounding it.

To identify the fishing areas in the Nile and the specific formation of each area.

To estimate the fishing capacity of the Nile and production rates.

To identify factors that affect the fishing capacity and how to benefit from that knowledge.

To modify present fishing laws to both protect the fish and to improve fishing areas.

To introduce scientific solutions to reestablish the river's natural balance.

To check the feasibility of using islands and penisulas as fish farms.

To study the social economics of the fishermen groups along the side of the river.

E.B.A.P.: LE 230,000 - 60 months

SP.C.C.: Food and Agriculture

1/28 National program for developing animal and fish wealth in the Egyptian village.

1/28 A Project for Dashdoory Village (Behira Governorate)

Goal:

To increase the animal productivity of those with farmers which represent 90 percent of the total number of animals in the country, in order to improve the farmers' income.

To collect true data about animals (cows, buffalo, sheep, goats) and poultry to identify the real problems that decrease production efficiency.

To formulate a policy that guarantees continuity of the process of improving the productivity of animals.

To keep a complete record for animals and their health condition and means of treating their diseases.

To improve the gene formations by using different crossing methods (for cows) and to follow the method of choosing and discarding in the case of buffalo.

To prevent slaughtering of young male buffaloes and to keep them for fattening in order to increase locally produced meat.

To furnish green fodder and fodder concentrates from the village products whenever possible in order to obtain the necessary production requirements for the animals.

To furnish veterinary care for the animals, including protection and treatment and parasite control.

To develop means for marketing animal production and abolishing the role of middlemen whenever possible.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Food and Agriculture

1/28B Project for the Fahema Village (Fayoum Governorate)

Goal: To develop the animal wealth (cows - buffalo - sheep - goats) and poultry by raising the animal productivity of each animal in order to meet the country's need for animal protein.

To furnish veterinary care for the animals and to protect the animals from diseases which are contagious to humans, such as T.B., false T.B., tape worms, liver worms, and contagious miscarriage.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Food and Agriculture

1/28C Project for Brageel Village (Giza Governorate)

Goal: To call the attention of scientific centers specialized in animal production, poultry production and animal health to study the most suitable technological means to increase production and improve products and to apply the results to the village.

To study the effect of economic development of the village's society as a result on increased production - on health and nourishment conditions of individuals.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Food and Agriculture

1/28D The national program to improve raising baby male animals through applying the results of projects: early weaning and use of milk alternatives.

Goal: To make it possible for the producer to keep baby male animals (oxen) during early stages of liquid feeding. This will make it possible to

fatten the animal to between 450 to 500 kilograms in about 1 1/2 years, which means a 20 percent increase in the red meat produced in the country. Besides, the female cows will reach their first delivery dates around 2 1/2 years of age. This means adding one animal and one milking season for the life span of each cow, an increase in production estimated at between 20 percent to 25 percent.

E.B.A.P.: LE 194,000 - 60 months

SP.C.C.: Food and Agriculture

1/29 Study of food loss (of plant origin) in Egypt

Goal: To estimate the volume of food loss (from plant origin) and reasons behind the loss which represent a high percentage and to determine - since statistical data is missing - the loss in each stage for each crop. This will determine the steps to be taken care of to decrease the losses.

Elements of study:

1. To review previous studies in Egypt and elsewhere in the world.
2. To design the sample of field research to study the loss
3. To collect data between points (from farmer to delivery to the consumer)
4. To analyze the data and, hence, determine the stage with the highest losses.
5. To analyze the national policy and determine alternatives to decrease losses.
6. Economic analysis of final results

E.B.A.P. LE 389,400 - 36 months

SP.C.C.: Food and Agriculture

1/30 Study of food losses (of animal origin) in Egypt

Goal:

This project is an integrated part of the previous one; It aims at studying loss of meat, fish, eggs and milk during handling between the producer and the consumer. This project also aims at decreasing the loss . which would mean more food being available to the consumer.

Elements of study:

1. Field estimate of the volume of loss from local production - and imports - in different stages: production, transportation, storage, and distribution.
2. Determining factors responsible for the losses
3. Determining alternatives to decrease losses and formulating the necessary programs for implementation.
4. Economic analysis for the alternatives to determine both the cost and the economic return.

E.B.A.P.: LE 286,900 - 36 months

SP.C.C.: Food and Agriculture

1/31 Improving and Supporting Egyptian bread.

Goal: Egypt imports an increasing amount of wheat which is used basically to make bread. Bread - now - has undesirable characteristics and becomes untastey within a few hours of buying. This automatically increases consumption (due to the unused, untastey characteristics). The basic goal is to increase the period during which bread stays tastey - up to 48 hours after baking which will result in decreasing the volume of imported wheat used in making bread.

Elements of study:

1. To collect date about the bread industry and to analyse different types of wheat (both local and imported) to determine the best way to have good bread production.

2. To determine the best coefficients and additives to prevent hardening of the bread according to the quality of flour used, and to test those coefficients on the semi-industrial level (in automatic bakeries).

3. To add some vitamins, other elements, and amino acids to the bread used at the level of an educational directorate or a school. To evaluate the results, such as: health conditions of students, additional cost of the additives, and the effect on decreasing the rate of bread consumption.

E.B.A.P.: LE 450,000 - 60 months

SP.C.C.: Food and Agriculture

1/32 Determining the storage periods for imported, frozen protein containing foods and their suitability for human consumption

Goal: The volue of imports of frozen meat and fish is increasing. In spite of the fact that there is a law that determines the period of storage, there are definite procedures to check the period of storage the elapses for the commodity before arriving at the port. The purpose is to determine the period of storage to check the product's suitability for human consumption.

Elements of study:

1. To find ways and means of analysis to judge the elapsed storage period of food commodities from animal sources (meat - poultry - fish).

2. To evaluate the effect of freezing and the freezing conditions on the quality of the product and its suitability for human consumption.

3. To find suitable means to prevent deterioration of frozen food during both transportation and distribution.

4. To determine the best procedure to judge the degree of suitability of frozen foods.

E.B.A.P.: LE 294,000 - 36 months

SP.C.C.: Food and Agriculture

1/33 Rural food industrialization in Egypt and means of developing and improving it.

Goal: To introduce simple industrialization methods to the Egyptian farmer in order to both increase his income and to make use of available resources by transferring them into products that are more valuable, and that can be distributed easily inside the village, and also outside the village.

Elements of study:

1. To use solar energy in drying and preserving vegetables and fruits.
2. To manufacture jams, juices, and pickles.
3. To process medical plants.
4. To improve popular foods.

E.B.A.P.: LE 200,000 - 6o months

SP.C.C.: Food and Agriculture

1/34 To technologically up-date slaughter houses in Egypt and to make use of their wastes.

Goal:

To update the slaughter houses and to improve their production.

To make the best use of their wastes and to transfer them into products of high economic value which will save on foreign currency.

To tenderize tough meat to improve its quality before marketing.

To produce some types of sausages which differ in their content of meat for low-income people.

Elements of study:

Blood analysis (albumin - hemoglobin - gamma globulin and amino acids) and the manufacture of sausages.

To study the dehydration of the glands (casings) - sausage manufacture (full meat and meat additives).

To study gelatin and glue

E.B.A.P.: LE 118,100 - 36 months

SP.C.C.: Food and Agriculture

1/35 To find reasons behind the underdevelopment of the Egyptian village and to formulate a plan for development in four villages.

Goal: To determine reasons and economic, social, and ecological determinates that are behind the underdevelopment of the Egyptian village, to identify both the practical and scientific solutions (whether for long range or short range) which should limit - or completely abolish - the effects of those reasons, and to present some ideas to avoid repetition of the reasons for underdevelopment.

To formulate a detailed plan with a time schedule according to which the execution of the solutions, programs, and projects will be carried out to improve the present status gradually unitl underdevelopment is eliminated.

Elements of study:

1. To improve the economic, cultural, and social status of the inhabitants of the villages. This will be reflected on the level of their performance and production efficiency. In other words, they will be able to participate in the development process.

2. To work on furnishing economic advantages, either by quantity or quality of products, whether of plant or animal source in those villages. This will lead - when nationally implemented - to an increase in agricultural production without increasing cultivated areas (vertical expansion).

3. To formulate an integrated development plan in cooperation with village councils in order to develop the cities into radiating centers for the surrounding villages. This will create an incentive for the farmers of the surrounding villages to follow the same procedures.

4. To introduce modern technology into agricultural procedures in those villages (modern irrigation systems - underground drainage - agricultural mechanization - new crop patterns (rotation) - improved cattle genes, etc.).

E.B.A.P.: LE 280,000 - 48 months

SP.C.C.: Food and Agriculture, and Social Sciences and Population

1/36 Factors that determine the success of integrated rural development and its plan of implemenation in Dakahlia Governorate.

Goal: Undoubtedly, rural development is one way of overcoming hunger and malnutrition, especially when it is balanced with urban development. Also, the balance between agricultural development and industrial development (whether rural or urban) is of great importance. It is known that developing the industrial sectors within the rural areas is an essential part of rural development since industry will manufacture the agricultural equipment directly or will furnish the hard currency necessary to procure the equipment.

Elements of Study:

The development policy for rural areas requires identification of supporting factors and the obstructing ones from the actual conditions of Egyptian society. Hence, planning the rural development processes could be done by taking full advantage of the supporting factors and getting rid of the obstructing factors in order to acheive a successful rural development process.

This research project is to identify the dynamics of the Egyptian rural development process, which is the relation between actions of different factors and the level of success of rural development, on one side, and the level of success of development proper on the other side. This is in addition to the relation between each factor and the other factors, in Dakahlia Governorate.

E.B.A.P.: LE 125,000 - 36 months

SP.C.C.: Food and agriculture and Social Sciences.

1/37 Studying of the rules of pricing policy for agricultural products

Goal: The prices of agricultural products have a great effect on the formulation of the development plan. Pricing has a direct and large effect on production since it affects the distribution of resources for agricultural resources and in turn improves both agricultural production and national production.

Elements of Study:

The plan includes formulating the basis for pricing policies, and pricing, of the following products:

cotton, wheat, corn, rice, beans, lentils, soybeans, peanuts, sesame seeds, onions, sugarcane, sugarbeets, citrus fruits, potatoes, and others.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Food and Agriculture

1/38 Economic evaluation of agricultural density of the three main crops (corn, rice, and cotton)

Goal: To perform an economical evaluation on both short term and long term effects of densification of those three main crops. The evaluation should concentrate on comparing the benefits against cost, harm (direct and indirect), and the relation between the final products of these crops and their channels of consumption, industrialization and marketing.

To present recommendations concerning fields and the possibilities of unharmful densities (economically) which would leave no room for error during execution, especially for those three crops.

To determine the priorities of densification and sites for execution according to studies which have been performed (in the office, the field and the lab) to guarantee the best economic results for the project.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Food and Agriculture

1/39 Economic and social analysis for the agricultural labor force and problems in Egypt

Goal: To evaluate the extent to which programs for training and preparing the agricultural cadres exist (for both professional and non professional labor) in order to meet the basic requirements for agricultural labor, and to check the wage levels in different areas, during the year.

To study the real reasons behind high wages and their relation to the general levels of prices and the standard of living and the emigration of agricultural laborors.

To estimate the productivity of agricultural labor and to measure the corresponding volume necessary for each zone in order to check shortages and excesses.

To estimate the rates of interchange and integration between labor and mechanization for plant and animal production in different zones and the relation between those and wages, cost and agricultural productivity.

Elements of study:

It depends on picking class random samples for different agricultural production zones in Egypt. A questionnaire sheet will be designed to collect data from farmers listed in the research sample. Both economic and statistical analysis will be applied to the data. The plan includes the following:

1. To review previous related studies.
2. To study the factors that affect the Egyptian agricultural structure.
3. To choose the research samples according to the rules of statistics. The samples should cover four governorates, each representing one pattern of Egyptian agricultural production patterns. Two of the governorates will be in the Delta and two in Upper Egypt. Two markazes will be randomly picked in each governorate and two villages will be chosen in each markaz. Therefore, there will be 16 villages, and each village will be assigned approximately 1200 questionnaire sheets, depending on the size of the village.
4. To design the questionnaire sheet for collecting data and to modify it, when necessary.
5. To collect data.
6. To review the data.
7. To tabulate the data.
8. To design a computer program for both mathematical and statistical analysis.

9. To perform the statistical analysis.
10. To derive and discuss the results.
11. To prepare the final report on the project.

E.B.A.P.: LE 150,000 - 48 months

SP.C.C.: Food and Agriculture

Other projects:

1/40 Weed control

E.B.A.P.: LE 100,000 - 48 months

1/41 Project for improving banana production

Goal: To treat the problem of deterioration in banana production.

Elements of study

- A short term, urgent plan to increase production.
- A long term plan to improve the quality of bananas and the feasibility of replacing the current kinds with new ones.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Food and Agriculture

1/42 Improving bean and lentil products.

1/43 National program for improving wheat production

1/44 National program for increasing production of fodder and improving grazing areas.

1/45 Improving the productivity efficiency and fertility efficiency of Egyptian milk cattle.

2. Industry

2/1 Manufacturing Aluminum sulphates (Alum) from local Egyptian silt

Goal: To obtain all technical knowledge in order to formulate the detailed engineering design to construct an economic unit for production of aluminum sulphate (Alum) which is necessary in the treatment of drinking water.

Elements of study:

To perform experiments on the semi-industrial level to determine the ideal conditions and the basic engineering data for a suggested method.

To perform laboratory experiments to help overcome some of the technical difficulties that occur during the stage of semi-industrial application.

To perform both engineering and feasibility studies for the ideal situation shown by the semi-industrial experiments for the final design of the industrial project.

E.B.A.P.: LE 70,000 - 12 months

SP.C.C.: Industry, Housing and Construction.

Benefiting agencies: Abu Zabaal Fertilizer Co. - General Authority for potable water.

2/2 Production of a nickel catalyst from local resources

Goal to produce a nickel catalyst with the needed efficiency from local resources, such as wastes resulting from processing oil in shortening factories, dust resulting from mazut, and from wastes of alloys which contain nickel.

Elements of study:

- To prepare a report on the steps taken towards manufacturing this catalyst.

- To survey both the qualities and quantities of local industrial wastes which contain nickel.
- To study the effect of operating the catalyst on the Nasr Fertilizer Company.
- To perform laboratory studies on other imported
- To perform chemical and physical analyses on all different catalysts.
- To study the physical characteristics of the agent used in the catalysts.
- To perpare samples of the catalyst and to test them at the semi-industrial level.
- To perform tests concerning the efficiency of the catalyst and to prepare a final report.

E.B.A.P.: LE 60,000 - 24 months

SP.C.C.: Industry

Benefiting agencies: The Cook Company for Basic Chemicals, El Nasr Fertilizer Company and Chemical Industries, and Abu Keer Fertilizer Company and Chemical Industries

2/3 To perform a survey on the quantity and quality and types of basic chemicals produced locally.

Goal: To survey basic chemicals which are produced locally and to identify the following:

- Chemicals produced annually in every production unit, their specifications, and methods of production.
- The extent to which the chemicals produced match the specifications and volume of production and to check possibilities for improvement.

- To survey industries of the local market which could make use of these basic chemicals.

Elements of study;

1. To survey companies and to collect data on the chemical industry.

To perform field visits to the companies to collect full data in place.

To compare products to specifications and to look for possibilities for improvement.

To plan "sub" industries for those basic chemicals.

To prepare a final report on this survey.

E.B.A.P.: LE 9,000 - 18 months

SP.C.C.: Industry

Benefiting agencies: Basic chemicals factories

2/4 To use the industrial wastes from manufacturing flouride salts which are necessary to the aluminum industry.

Goal:

- To identify and achieve the technical knowledge needed for detailed engineering designs for construction of economic units that will produce Carbolite and aluminum flouride through the use of the flourine available in the process of manufacturing phosphate fertilizers.

Elements of study:

- To perform laboratory experiments to identify the most ideal conditions needed to produce Carbolite.
- To perform semi-industrial experiments to identify the ideal conditions and basic engineering data concerning methods suggested for production of Aluminum flouride and Carbolite.
- To perform both engineering studies and feasibility studies (technical and economical) according to results in the semi-industrial stage.

E.B.A.P.: LE 100,000 - 18 months

SP.C.C.: Industry

Benefiting agencies: Abu Zabaal Company for Fertilizer and Chemical Industries, Egyptian Financial and Industrial Company

2/5 To produce high resistance steel for use in reinforced concrete.

Goal: To obtain a high economic return through the use of high resistance steel in reinforced concrete instead of the steel which is used at the present time (steel 35).

Elements of study:

- To collect the available technical data on different kinds of high resistance steel.
- To produce the kinds needed from steel in the electric arc furnace on the semi-industrial level in the metal research center.
- To examine the steel under the microscope and to study factors which affect the microscopic configuration.

- To study both mechanical and chemical properties
- To study the characteristics of welding process on high resistance steel
- To apply the results on the industrial level using electric furnaces in the Delta Steel Company.

E.B.A.P.: LE 50,000 - 12 months

SP.C.C.: Industry, Construction and Housing

B.A.: General Organization for industrialization, local companies what produce reinforcing steel - Egyptian Iron and Steel Company - Delta Steel Company

2/6 To use high resistance steel in reinforced concrete:

Goal: To study the behavior of high resistance steel (higher than 50 kg/cm^2 52, and 55) in reinforced concrete structures.

Elements of Study:

- To study the bond between reinforcing bars and the concrete
- To study the behavior of reinforced concrete columns - reinforced with high resistance steel - under loads and the effect of the time factor.
- To study the behavior of concrete beams, reinforced with high resistance steel under different conditions of loading.
- To prepare the design tables that will be used with high resistance steel.
- To study the economics of using high resistance steel in concrete structures by using steel bars with large diameters and with small diameter welded mesh.
- To test the susceptibility of high resistance steel to rusting in reinforced concrete.

E.B.A.P.: LE 50,000 - 18 months

SP.C.C.: Industry, Construction, and Housing

B.A.: Ministry of Construction and Housing - General Organization for Industrialization

2/7 To estimate local market requirements of special types of steel and to choose some types for local production

Goal: To choose some types of special steel for local production according to the needs of the local market, to check the feasibility of producing them in Egyptian factories, and to rationalize use of those types of steel.

Elements of Study:

- To determine the volume of local market and the market requirements of each type of special steel.
- To determine quantities and types suggested for production in Egypt.
- To determine characteristics and methods of production for the suggested types.
- To promote local capacities to produce types that are often used and which represent the bigger percentage of consumption.

E.B.A.P.: LE 30,000 - 12 months

SP.C.C.: Industry

B.A.: General organization for Industrialization - Factories of the Delta Steel Company. (G.O.F.I.)

2/8 Use of graphite poles in the iron and steel industry, their consumption, and feasibility of locally producing them.

Goal: Feasibility study in manufacturing graphite poles locally.

Elements of Study:

- To identify the physical characteristics of graphite poles and methods of their production.
- To identify the needs of the steel industry (for poles) until the year 2000.
- To survey materials that can be used in manufacturing poles.
- To prepare the final report and the feasibility study.

E.B.A.P.: LE 30,000 - 12 months

SP.C.C.: Industry

B.A.: Local companies producing steel - G.O.F.I.

2/9 The production of the ferrotitanium alloy on the semi industrial level from Ammonite in Egypt.

Goal: To produce the ferro titanium alloy applying the alum-thermal method using the semi industrial furnaces in the National Research Center.

Elements of Study:

- To collect data and samples of the ore.
- To concentrate the ore.
- To melt the ore and obtain the alloy.
- To place a material scale and a thermometer.
- To evaluate the project and prepare the final report.

E.B.A.P.: LE 65,000 - 24 months

SP.C.C.: Industry

B.A.: Factories of Delta Steel Company and Egyptian Iron and Steel Company - Military Factory Number 9.

2/10 Production of Ferrovanadium alloy on a semi-industrial level.

Goal: To produce the alloys of ferrovanadium, ferro nickel, ferronickel vanadium on a semi industrial level to cover the demand in Egypt.

Elements of Study:

- To concentrate the ore.
- To separate the vanadium from the nickel dust by acidic reaction with sodium carbonate. Then to produce the ferro vanadium alloy at the levels of 10, 100 and 200 kilograms, and to place a material scale and a thermometer for determining the most suitable conditions.
- To separate the nickel and to increase the concentration of the vanadium oxide (without the process of a acidic reaction with sodium carbonate). To place a material sclae and a thermometer for determining the most suitable conditions.
- To evaluate the project and prepare the final report.

E.B.A.P.: LE 80,000 - 24 months

SP.C.C.: Industry

B.A.: Factories of the Delta Steel Company - Iron and Steel Company - El Nasr Casting Company - the Naval Arsenal

2/11 To improve railroad cars produced locally

Goal: To improve railroad cars produced locally by: decreasing their weight, improving their performance, decreasing their production cost, cost of operation, and cost of maintenance.

Elements of Study:

1. To study and collect the data about railroad tracks in Egypt by using available equipment in the Egyptian railroad authority, Cairo University, and the Academy of scientific research.

- To measure the stresses in the steel frame of cars resulting from different forces due to the condition of the track and other regular forces that act on the car during regular operation. This measurement will be done in the lab to be constructed in S.E.M.A.F.
- To identify parts of the car that can be lighter in weight
- To test the stresses in the steel sections that will be lighter in weight. They are expected to be within the range of safety.
- To determine the stresses in about 2000 points in the new form of the frame using a suitable structural analysis methods.
- To test the new modified frame both statically in the lab and then dynamically on the track (without passengers) while replacing the expected load in the car with sandbags or steel weights.

E.B.A.P.: LE 170,000 - 30 months

SP.C.C.: Industry

B.A.: Railroad authority

2/12 To decrease the noise level in airconditioning sets

Goal:

- To try to replace imported elements (in manufacturing air conditioners) with local parts.
- To improve the performance via choosing the best elements.
- To decrease the noise level.
- To decrease the cost

Elements of Study:

- To choose 10 sets randomly and to test them in a detailed manner especially to check the levels of both performance and noise.
- To determine points to be re-designed in order to produce better sets which avoid the areas of defect.

- To choose (randomly) some sets from the modified design and to test them to evaluate the effect of the change. The standard of performance is desired to reach world standards.

E.B.A.P.: LE 26,000 - 12 months

SP.C.C.: Industry

B.A.: Cold Air (El Nasr Co. for Engineering and Cooling)

2/13 To make use of wastes from food industrial plants in producing protein and fats to be used for feeding both humans and animals.

Elements of study:

- To evaluate wastes from food plants
- To separate elements of economical values in the wastes
- To prepare the wastes for recylcing
- To produce microbic proteins and determine their use
- To produce microbic fats and determine their use

E.B.A.P.: LE 132,000 - 48 months

SP.C.C.: Industry, Food and Agriculture

B.A.: El Nasr Co. for Preserved Food (Kaha)

Edfina Co. for Preserved Food

2/14 Suitability of some types of barley for food industrialization

Goal:

- To study the characteristics of malts produced from different kinds of barley and their suitability for industrialization
- To study the feasibility of introducing the manufacture of malt extract necessary for baking and medical industries.

- To study the effect of mixing different preparations of barley flour with wheat flour on the physical characteristics and nutritional value of the bread produced.

Elements of Study:

- To manufacture malt. Different, new kinds of barley will be tested for manufacturing malt while studying the effect of different coefficients and conditions during soaking and drying.
- To manufacture malt extract for the bread industry. The process will include characteristics of the extract, its suitability for baking, and factors affecting it, such as: treatment - concentration - and enzyme activities.
- To manufacture malt extract for medicinal industries. Process will include the effect of both coefficients and concentration on enzyme activities.
- To use different proportions of barley flour and study the effect on making paste and fermentation.

E.B.A.P.: LE 164,000 - 24 months

SP.C.C.: Industry, Food and Agriculture

B.A.: Ahram Beer Co.

2/15 To improve the packaging and wrapping industry for food commodities.

Goal: The project aims at total development of packaging industries on the national level through integrated studies, research work (both theoretical and practical) and applied research which includes all technical, economical and social aspects. Also, it aims at formulating the basis for a national policy to develop these industries in stages, that are compatible with market requirements for food commodities of which five will be chosen.

Elements of study:

- To take the necessary actions and procedures to package commodities sold at the cooperative stores.
- To cover the needs of distribution channels for packaging and wrapping.
- To package and wrap food commodities that are distributed by ration card. This is expected to take place on a national level withint 3 years.

E.B.A.P.: LE 40,000 - 18 months

SP.C.C.: Industry

B.A.: The companies under the Ministry of Supply - Some companies in the Ministry of Industry.

2/16 Updating study performed in Egypt on packaging

Goal: To update the study formerly performed in 1974 as an assigned task by G.O.G.I., and to summarize its 6 volumes for presentation to the people concerned with issues of packaging and wrapping.

Elements of study:

- To review and update the study
- To prepare a handbook guide for the packaging and the wrapping industry in Egypt and to list the expected epansion and replacement projects.
- To evaluate the strategy for packaging and wrapping until the year 2000.

E.B.A.P.: LE 6,000 - 12 months

SP.C.C.: Industry

B.A.: Agencies concerned with packaging and wrapping in Egypt.

2/17 The effect of the steps of manufacturing on the residue left from pesticides in processed food materials.

Goal:

- To determine quantities of pesticide residue in canned and frozen foods in Egypt; to compare the quantities with the universal specifications, and to supervise the process of washing in order to determine the residue content which can be further decreased through the manufacturing process.

Elements of study:

- A complete survey of all scientific textbooks
- To determine the types and concentrations that every food material (vegetable and fruit) is subjected to.
- To extract the residue of pesticides from the food (vegetables and fruits) both before and after manufature.
- A complete analysis of all inputs to both Kaha and Edfina factories after manufacturing.
- To extract and estimate the residue of pesticides in table oil (corn oil and cottonseed oil) and the percentage of residue to the original quantities estimated.

E.B.A.P.: LE 169,880 - 24 months

SP.C.C.: Industry - Food and Agriculture

B.A.: Kaha and Edfina Companies for preserved foods.

2/18 Production of bricks used for melting pots and suitable for the industry of oxygen steel.

Goal: To use local resources and available manufacturing conditions (in local factories) to produce bricks for melting pots suitable for the oxygen steel industry.

Elements of Study

- To survey the scientific textbooks and experiences concerned with both the manufacture and use of bricks for melting pots.
- To evaluate the imported pot brick qualities in those used in the Iron and Steel company plants.
- To evaluate the feasibility of manufacturing half silicon pot bricks from raw materials coming from Abu Sibeera (20 percent alumina).
- To study the feasibility of manufacturing pot bricks from raw materials from Aswan and Sinai (40-42 percent alumina)
- To study the quality performance of the bricks produced compared to imported ones.
- To follow up on the performance of the bricks produced in the melting pots of the Iron and steel factory.
- To perform an economic feasibility study on the project.

E.B.A.P.: LE 20,000 - 24 Months

SP.C.C.: Industry

B.A.: Egyptian Ceramics Company - Egyptian Iron and Steel Company.

2/19 To develop local production of magnezite ceramics

Goal: To determine the most suitable technological factors for production of magnezite ceramics with properties that are competitive with world standards in order to gradually decrease import of similar products.

Elements of Study:

- To survey textbooks concerned with the subject.
- To evaluate use (and also physical properties) to check their conformity to specification.

- To study the most suitable technological factors to obtain products with universal specifications.
- To test the local products under chosen manufacturing conditions in some metal factories, such as: Iron and Steel Co, - National Co. - Copper Co. - Delta Steel Co. - Cement factories.

E.B.A.P.: LE 25,000 - 18 Months

SP.C.C.: Industry

B.A.: Egyptian Ceramics Co., Iron and Steel Co., cement companies

2/20 Treatment of leakage in dry cell batteries

Goal:

To raise the efficiency of local dry battery production and to improve its efficiency and compete with foreign imports. To protect users from battery leakage.

Elements of Study:

- To manufacture groups of the three main ordinary models of those batteries (some units are treated against erosion and other units treated against leakage according to specifications of manufacture, insulation and placing of an outside cover)
- To perform the vacuum tests according to the specification on all units mentioned and then to perform a study to determine the most suitable conditions.
- To compare the results of the vacuum tests performed on units produced under most suitable conditions with imported units.

E.B.A.P.: LE 19,500 - 24 months

SP.C.C.: Industry

B.A.: General Batteries Co. - Kaha Co. for Metal and War industries

3. Oil, Energy and Mineral Wealth

3/1 Production and Evaluation of some Industrial Plasticizers

Goal:

To survey the available local raw materials that can be used to produce plasticizers, to exercise the process of production, and to identify the problems (expected and unexpected) in the different stages

Elements of Study:

- To perform practical research on the laboratory level and the level even greater than the laboratory.
- To perform both feasibility and technical studies for the project
- To collect data

E.B.A.P.: LE 300,000 - 36 months

SP.C.C.: Oil, Energy, and Mineral Wealth

B.A.: Ministry of Industry

3/2 Ideal use of wastes from refineries

Goal:

To sue some of the wastes from local oil refineries (which have a local economic value) to produce chemical compounds of high economic value.

Elements of Study:

1. Field surveys of different refineries
2. Laboratory studes
3. Laboratory evaluation of chemicals
4. Semi-industrial production
5. Field evaluation of the performance
6. Evaluation of results and preparation of the final report.

E.B.A.P.: LE 120,000 - 18 months

SP.C.C: O.E.M.W.

B.A.: General Petroleum Authority

3/3 Study on production of additives to multi-grade lubricating oil

Goal: To perform research studies for production of improved additives (for the coefficient of viscosity) for lubricating oil in Egypt with the aim of producing them locally instead of importing them.

Elements of Study:

- Laboratory studies which include production of additives which will improve the coefficient of viscosity
- Stage of producing additives at the level of 20 liters in one operation.
- Stage of testing the performance, which includes: designing mixes with universal standard of performance, testing them, and comparing them with imported additives.

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: O.E.M.W.

B.A.: G.P.A.

3/4 Use of asphalt emulsions for stabilization of sandy soil

Goal: To avoid the burying of villages and structures; to avoid cutting off transportation routes, whether highway or railroad; and to protect newly reclaimed areas and desert roads from the accumulation of sand.

Elements of Study:

- Choice of experiment site
- Collection of necessary data

- Studies concerned with soil
- Studies concerning both preparation and identification of the characteristics of petroleum materials
- Field execution

E.B.A.P.: LE 845,000 - 60 months

SP.C.C.: O.E.M.W. - Environment

B.A.: General Authority for Roads & Bridges

3/5 Study on the use of alcoholic materials in gasoline mixtures for use in cars

Goal: To add some alcoholic materials available locally to gasoline mixtures and to solve any of the resulting problems concerning: efficiency, unsuitability to local conditions, such as temperature - humidity - storage - and handling.

Elements of Study:

- Stage of determining chemical and physical properties for different alcoholic materials.
- Stage of preparing mixtures of alcohol and gasoline (up to 20 percent by weight), and checking their laboratory characteristics.
- Stage of field testing mixtures of up to 20 percent alcohol by weight.
- Stage of technical feasibility of increasing the alcohol percentage over 20 percent by weight.

E.B.A.P.: LE 60,000 - 12 months

SP.C.C.: O.E. M.W.

B.A. : Oil sector in general.

3/6 Rationalization of Energy Consumption in the Refining Industry

Goal: To perform a field study on the average consumption of energy in the oil industry, to compare this average with: theoretical averages - design averages - and world averages; and to identify points of waste of the energy

Elements of study:

- To evaluate rate of energy consumption in each refinery.
- To compare field rates with theoretical
- To compare both field rates and theoretical rates with universal rates
- To prepare a report containing the relevant results and recommendations.

E.B.A.P.: LE 75,000 - 12 months

S.P.C.C.: O.E. M.W.

B.A.: Oil Sector, Ministry of Electricity

3/7 Field and Laboratory Evaluation of collecting lubricating oil (for motor and industry) that was formerly used.

- Goal:

To perform a field evaluation about circumstances of collecting used lubricating oil, and to check the feasibility of rationalizing the use and extending the life time of lubricating oil.

Elements of study:

- To perform field visits to evaluate the quality and characteristics of used oil.
- To perform laboratory analyses to evaluate the extent of deterioration of its physical and chemical properties.

- To treat used oil with suitable methods.
- To perform field tests and laboratory experiments

E.B.A.P.: LE 90,000 - 12 months

SP.C.C.: O.E. M.W.

B.A.: National economy, oil sector, transportation sector

3/8 Project for re-use of asphalt pavement layers in producing asphalt mixtures

Goal: To re-use old pavement layers in the production of new asphalt mixtures to be used in paving. This will result in savings in maintenance, paving, and operating expenses.

Elements of study:

- To determine types and properties of solid materials
- To determine properties of old asphalt mixtures
- To determine types and properties of solid materials to be added to the new mixtures
- To determine properties of the asphalt to be added to the old mixture
- To determine the proper mixture proportions of the new materials with the old pavement.
- To determine properties of the new product
- To design and execute test sections
- To follow-up the performance of the test sections under the effect of both climatic and traffic conditions.

E.B.A.P.: LE 85,000 - 36 months

SP.C.C.: O.E.M.W.

B.A.: Oil companies

3/9 Use of Asphalt Emulsions in paving Egyptian roads

Goal: To produce quick cheap mixtures to rationalize consumption, and to decrease cost of both maintenance and construction expenses.

Elements of Study:

- To study types of emulsions and bitumin produced locally since each type of bitumin has its own physical and chemical properties.
- To study whether the asphalt to be used is solid (may have a fluxing agent added to it) or cut back, and the effect of type of bitumin on the properties of the emulsion.
- To study the type of dust mill, speed of rotation and effect on tar.
- To study types of additives that increase the stability of mixtures during storage.
- To study methods of storage (both in the factory and in the field) and methods of transportation
- To construct test sections (of roads) to achieve best results

E.B.A.P.: LE 150,000 - 36 months

SP.C.C.: O.E. M.W.

B.A.: Paving and construction companies

3/10 Improvement of production of lubricating oils

Goal: To develop the agent necessary for the suggested study; to study operating conditions and the extent of hydrogen consumption.

Elements of Study:

- To study refining of lubricating oils by the conventional methods - on the semi-industrial level.

- To evaluate the refining process for lubricating oil using hydrogen.
- To perform an economic feasibility study - if possible .

E.B.A.P.: LE 300,000 - 24 months

SP.C.C.: O.E., M.W.

B.A.: Oil companies

3/11 To design and produce conventional water desalinization units

Goal:

To design, construct, and test convetional water desalinization units that can be manufactured, operated on the industrial level in Egypt.

Elements of study:

- To choose the best methods for water desalinization according to both technical and economic studies in Egypt.
- To design semi-industrial level units according to the methods chosen and to overcome the important problems.
- To construct the units using local resources.
- To test those units in the laboratory to examine the techincal characteristics under different operating conditions and to study the suitability of used materials to those conditions.
- To develop the final design of the units according to the results.
- To perform an economic study on the production of those units locally.

E.B.A.P.: LE 175,000 from 36 to 48 months.

SP.C.C.:

3/12 To develop and manufacture the wind turbines to generate electricity and to pump water.

Goal: To benefit from local experience in designing and manufacturing

wind turbines using local available resources. The turbines will be used to pump underground water and to generate electricity in desolate areas and new communities.

Elements of study:

- Data collection
- Studying different systems
- Different sites and determining the specification of the product
- Design

E.B.A.P.: LE 105,000 - 24 months

SP.C.C.: O.E., M.W.

3/13 Program for rationalization of energy consumption in factories (for five sectors)

Goal: To study the efficiency of energy use in some of the factories in the following industries: Metal Industries (Iron & Steel - Aluminum); Chemical Industries (fertilizer industry)- Building Materials Industry - Spinning and weaving Industries - Food Industries.

Elements of Study:

- Stage of Preparation
- Stage of Analysis
- Final stage

E.B.A.P.: LE 500,000 - 24 months

SP.C.C.: O.E., M.W.

3/14 Use of Kerosene to replace gas in cooking instruments produced locally and to decrease dependence on petroleum gas.

Goal: To design and produce cooking units that use kerosen and that would attract the Egyptian consumer. This would lead to saving

hard currency spent to purchase butane gas.

Elements of Study: First, the development and desgin of cooking units common in the Egyptian society, taking into consideration the cheap resources and suitable production machinery, and then to execute the design in a practical manner.

E.B.A.P.: LE 15,100 - 24 months

SP.C.C.: O.E., M.W.

3/15 Study of nuclear safety

Goal: To derive computational models to estimate radiation levels in the areas surrounding the nuclear station in El Dabaa in the cases of ordinary operation, and in the case that accidents happen, taking into consideration the reports on the safety analysis of nuclear stations.

To study the fracture mechanics of the steel structures for the compressed water reactors and the relation between the mechanics and the safety of the reactor during the life span of the nuclear station.

Elements of study:

- To collect data on the Dabaa site.
- To identify the probable radiation source in the nuclear reactor assuming from 1:4 nuclear stations with 900 megawatts.
- To prepare computerized models by writing the require equations and to have a program run in a computer.
- Practical application, and to use the computer models to estimate the radiation levels in different areas of the site and to compare the results with the report on safety analysis prepared by the French Consultant (Sofratom).

E.B.A.P.: LE 125,000 - 30 months

SP.C.C.: O.E., M.W.

3/16 Electrochemical storage and transfer of solar energy

Goal: Semi-industrial execution of a battery capable of electrochecmial storage and the transfer of solar energy and to perform necessary feasibility studies

Elements of study:

- To design a battery capable of electro-chemical storage and the transfer of solar energy.
- To form a highly scientific level of research on this subject which requires the cooperation of different research workers in many specializations.

E.B.A.P.: LE 9,375 - 12 months

SP.C.C.: O., E., M.W.

3/17 Dehydrating agricultural products using solare energy

Goal: To use solar energy for dehydrating agricultural products to preserve them for storage. This is in addition to easing their transportation without spoiling.

Elements of study:

- To study solar air heaters for different areas.
- To evaluate the feasibility of reflecting coefficients for the solare absorbing surfaces.
- To evaluate the productivity of dehydrated agricultural products per unit of absorbing surface.
- To evaluate the volume of productivity per small dehydrator.
- To perform economic evaluation of one complete unit of the solar dehydrator.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: O., E., M.W., Food and Agriculture

3/18 Exploration for potassium salts and radioactive materials

Goal: To take advantage of the results of oil exploration in the Gulf of Suez, Red Sea, and the western desert in exploring for potassium and magnesium salts, sulphur, bromide, and uranium.

Elements of Study:

To review the geophysical studies that were performed for oil wells and to interpret them to identify the minerals and salts previously mentioned, to retrieve samples from prospective sites, and to perform the necessary chemical analyses to identify the mineral content of the samples.

E.B.A.P.: LE 500,000 - LE 50,000 for the first year in which the academy participates with LE 30,000 - 60 months begining 1982/83

SP.C.C.: O., E., M.W.

3/19 To extract uranium from phosphates.

Goal: To perform laboratory experiments on Egyptian ores to identify their contents, to treat them with acids to obtain phosphoric acid and wastes, and then to extract uranium from the wastes.

Elements of Study:

To review previous research and studies on uranium in Egyptian phosphates, to contact international companies with relevant experience to perform surveys on the mineral areas, to treat the phosphates (especially in the Sebaia zone), and to follow through on uranium in different stages in phosphate factories, especially the Abu Zabaal factory.

To perform elementary studies on the cost and economics of uranium extraction from phosphates and to prepare the final report and recommendations while arranging to hold a symposium on uranium from phosphates.

E.B.A.P.: LE 500,000 (of which the Academy participates with LE 100,000) - 24 months

S.P.C.C.: E., E., M.W.

B.A.: Nuclear Materials Authority

3/20 Completion of Calibrated magnetic field mapping to cover the Sinai Peninsula.

Goal:

To perform some field readings of the magnetic elements in some spots of the area.

Elements of Study:

- To perform field readings of the earth's magnetic field every five kilometers on paved roads in Sinai - after drawing maps of distribution of the elements of the earth's magnetic field.
- To draw the map of the standard field for those elements and to connect them with the map of the standard field of the country for the time period extending until 1984.
- From the maps of the distribution of the elements of the magnetic field, some areas will be identified where detailed surveying will be performed to study the deep formations.

E.B.A.P.: LE 60,000 - 36 months

SP.C.C.: O., E., M.W.

3/21 To support and extend the period for exploration for the distribution of coal formations in Egypt.

Goal: Since the coal reserve in Egypt is modest, exploration for new formations (deposits) is an important task that the nation should support.

Elements of study:

To add new study data and information on excavating about 87 meters in new sites of discovery which exist at a great depth and are not easy to extract with the conventional and known methods.

E.B.A.P.: LE 20,000 - 12 Months (until April 30, 1983)

SP.C.C.: O., E., M.W.

3/22 Burning of petroleum coals and petroleum wastes from coals of liquifaction stratas.

E.B.A.P.: LE 250,000 - 48 months

3/23 To increase petroleum production from producing fields by using different methods.

E.B.A.P.: LE 300,000 - 36 months

3/24 USe of local chemicals and resources in liquids used for excavations.

E.B.A.P.: LE 45,000 - 36 months

3/25 Ideal use of natural gas

E.B.A.P.: LE 200,000 - 48 months

3/26 Use of natural gas in motors

E.B.A.P.: LE 200,000

3/27 Developing a small motor suitable for different uses, such as in water pumps

E.B.A.P.: LE 100,000

3/28 To manufacture a routine unit for production of biological gas with the goal of generalizing its use in rural areas.

E.B.A.P.: LE 35,000

3/29 To rationalize energy use in stoves

E.B.A.P.: LE 50,000

3/30 Extraction of alum from desert silts

E.B.A.P.: LE 100,000 - 36 months

The Field of Services

4. Health and Medicine

4/1 Study on children's diarrhea and malnutrition

Goal:

To concentrate on both protection and early treatment which save the heavy expense involved in regular treatment. The expenses are estimated at approximately LE 1 Million annually, for only the price of salts used to treat dehydration.

Elements of Study:

To study diarrhea cases in 500 children between the ages of six months and two years - which is the age common for diarrhea - to check the social and nourishment status of their families and to have the children put under surveillance when they are attacked by diarrhea to determine their reactions to different variables during a three-year period.

E.B.A.P.: LE 30,000 - 36 months

SP.C.C.: Health and Medicine

4/2 Study to formulate a nourishment policy for the Egyptian citizen

Goal: To improve the health standpoint - from the nourishment point of view - for the individual. This can be done through determining actual estimates for their requirements in different environmental conditions and the variations in their age, class, and environment. Also, to rationalize expenditures in the field of food, such as in production, processing, imports in light of different economical, agricultural and industrial variables. Care should be given to the

manner of storage, transporting and condition of the food.

Elements of study:

To collect the basic available data necessary to formulate that policy - especially in the following areas:

A. Food patterns

B. Actual consumption of the Egyptian individual according to the following variables (age - sex - environment- income)

C. Estimates of production available locally

D. Estimates of imports and their ratio to actual requirements

E. Available resources for storage and distribution - now - and in the future.

F. Capacity for food industrialization with the aim of decreasing cost of food and cost of preserving it.

G. To formulate the necessary health procedures for food.

E.B.A.P.: LE 20,000 - 6 months

SP.C.C.: Health and Medicine - Food and Agriculture - Industry

4/3 Research on old-age diseases

Goal: To perform a field survey on diseases of old age, to determine the rate of increase in the diseases and the effect of different factors. The research covers both protection and treatment and the type of care required. This will participate in the welfare of that group of citizens whose number is increasing yearly.

Elements of study:

- Increase in average age
- Old age diseases
- A. Cancer, B. Arthritis, C. Diabetes, D. Psychological, dental and nutrition problems.

E.B.A.P.: LE 50,000

SP.C.C.: Health and Medicine

4/4 A field research in the village of Gezeeret Mohamed in Giza

Goal: To survey the extent of the spread of Bilharzia (in two types) in the village and to study the snails which carry the disease with regard to the different factors in causing the disease.

Elements of Study:

- Clinical examination of all villagers
- Urine and stool analysis
- Determining the number of eggs in the urine and stools
- Other lab tests which will be decided after obtaining the results of some special clinical tests concerned with immunity, blood and liver functions, and viruses.
- Treatment will be according to the results.
- Evaluating the treatment with regard to percent recovery and side effects.

E.B.A.P.: LE 25,000 - 48 months

SP.C.C.: Health and Medicine

4/5 An environmental study for the Biomfilaria alexandrena snails in Upper Egypt.

Goal: To study the reasons behind the spread of the Biomfilaria snails in upper Egypt and to study the environmental changes that led to the gradual disappearance of the Bulinus tertkanis snails - which carry Bilharzia - in some areas of the Delta.

Elements of Study:

- Field study on the extent of the spread of Biomfilaria snails in the southern Delta, Upper Egypt governorates, Lake Nasser, and northern Sudan.

- Field studies on the spread of the Bulinus snails in the northern Delta, southern Delta and Upper Egypt.
- To study the accompanying environmental factors (physical - chemical - biological)
- To study and catalog snails and their susceptibility to attack by the parasites and the percentage of spreading under different environmental conditions.
- To study the possibility of disease transfer in the field

E.B.A.P.: LE 49,000 - 36 months

SP.C.C.: Health and Medicine.

4/6 A study concerning the status of Bilharzia in the governorates of the Delta

Goal: To identify the present status of spreading of both the Hematobium and Mansoni Bilharzia in the governorates of the Delta, to determine the size of the problem, and to use the results to compare with previously available results.

Elements of study:

- To prepare laboratories and to train technicians to choose research sites and to choose the statistical sample, and to prepare the maps.
- To analyze in the laboratory to identify the extent of the spread of Bilharzia.
- To analyze the data and to prepare a final report.

E.B.A.P.: LE 36,000 - 24 months

SP.C.C.: Health and Medicine

4/7 Liver cirrhosis as a result of Bilharzia

Goal:

To perform both chemical and pathology studies on cirrhosis of the liver caused by Bilharzia and to study the cologene that causes it.

Elements of study:

The study includes analysis under the electronic microscope of livers affected with cirrhosis caused by Bilharzia and the role of viral lever infections associated with it in some cases.

E.B.A.P.: LE 120,000 - 48 months

SP.C.C.: Health and Medicine

4/8 Manufacture of Medicine and pharmaceutical mixing of

Goal: To perform the necessary experiments to develop an Egyptian medicine (capable of administration through the mouth) from biological

To test that medicine pharmacologically, biologically, and clinically;

Elements of study:

- To perform laboratory experiments to develop the suggested compounds, to treat them, to identify their structure through quantitative analysis, and to study both their physical and chemical properties.
- To perform the preliminary pharmacological study for the final compounds.
- To compare betwen the pharmocological results and their poison level in comparison with common medicines, such as Lokazfloon and Ameilhar, and to choose the best compound for further study.
- To check the absorption and the distribution in blood, urine and cells, using animals.

- To check the poison level that develops in test animals after a complete course of the medicine, to examine for side effects (both short and long range) and theamount of the compound which is fatal.
- To perform a study on the chemical structure and the pharmacological effect for chosen compounds.
- To perform a biological study which includes estimates of biological liquids.
- To perform both clinical and pharmaceutical studies and degree of stability in solutions.
- To prepare chosen compounds in a pharmaceutical form to be used as medicine.

E.B.A.P.: LE 186,000 - 60 months

SP.C.C.: Health and Medicine

4/9 Asthma

Goal: To determine the exact extent of the problem

Elements of study:

First stage (for one year)

1. To review previous studies
2. To buy equipment and tools
3. To collect samples (fungus and pollen from the air)
4. To perform preliminary studies

Second Stage (for three years)

To perform studies and different laboratory work and clinical research (field work)

Third Stage which is for the last six months of the second stage and which analyzes the results and presents recommendations and during which the report will be written.

E.B.A.P.: LE 580,000 - 48 months

SP.C.C.: Health and Medicine

B.A.: Ministry of Health, Asthma, Respiratory section in different hospitals and universities.

4/10 The role of health centers in fighting tuberculosis

Goal: To determine a practical role for the health centers, obstacles to carrying out that role, and the possibility of practical implementation of world programs in that respect which adopt both economical and health conditions since these programs result in real savings in fighting T.B. locally within the Egyptian environment.

Elements of study:

- To measure the immunity level in blood against some new medicines in addition to the side effects, and to compare the results with those results obtained in patients treated in their homes by both long and short range treatments.
- A field research to study the effectiveness of cooperation, or integration of services in the branches of medical centers that are located in distant areas (branches of centers in Shubra El Khema-Bahteem - Mostrod) by adopting the following:

A. Collecting sputum and analyzing it at the branches, not having the patients go the the main centers - to check the percent increase in T.B. cases.

B. To give treatment to patients at the branches without having to send them to the main centers to check the effect of this procedure on the percent of absence or irregularity of patient attendance.

C. Results can be used in formulating the policy in other centers.

E.B.A.P.: LE 241,000 - 36 months

SP.C.C.: Health and Medicine.

4/11 Evaluation of medical services for out-patients

Goal: To ease the load on the inside sections of the hospital in order to increase their capacity.

- To improve the standard of service for out-patients
- To decrease crowding in the out-patient sections in order to increase confidence
- To decrease the cost of treatment

Elements of study:

- To determine the types of diseases which can be treated in out-patient sections
- To study the manner medical services are presented, sequence of offering services, and transfer to specialized hospitals.
- To determine the system of laboratory medical check-ups and x-rays.
- To determine the system of receiving medicine from the outside pharmacy.

E.B.A.P.: LE 40,000 - 24 months

SP.C.C.: Health and Medicine

4/12 To study the existing medical laws and to modify them to suit the new conditions in the areas of health, social, economical and administrative conditions.

- To tighten execution and supervision and to simplify procedures
- To ease the performance of medical services
- To formulate measures for new health problems, such as drinking water, air pollution, industry and vocational health, food materials.

Elements of study: A complete review of existing medical laws.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Health and Medicine

4/13 A pilot study to improve the medical records system

Goal: To ease the record procedures with the simplicity of statistical analysis, and to put the basis for both medical planning and evaluation.

Elements of Study:

- To design shapes of records, volume and ways of filing data
- System of keeping records
- Data analysis and result deduction (statistically)
- Feed back system

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Health and Medicine

4/14 Study on research directions in the area of basic medical sciences in Egypt and how they are connected to the clinical side and their application.

Goal: To try to determine the ways research dominates in the area of medical science in the faculties of medicine and medical research institutes and the extent to which they conform with international ways and how they are tied to both the clinical side and the applied side, and to recommend their development in order to fulfill their purpose.

E.B.A.P.: LE 15,000 - 36 months

SP.C.C.: Health and Medicine.

4/15 To study the results of decreasing the period of basic medical education in the faculties of medicine on the level of student.

Goal: To identify the extent of comprehension by the students of the necessary knowledge of the pre-clinical stage.

E.B.A.P.: LE 20,000 - 60 months

SP.C.C.: Health and Medicine

4/16 To study the probability of teaching basic medical education in Arabic and the effect on both the student and research work in Egypt.

Goal: To evaluate the importance of arabization of the studies and the possibilities of successful application and the effect on: graduates and medical research work.

Elements of study:

To prepare and organize a study-research session on this topic.

E.B.A.P.: LE 5,000 during 1983

SP.C.C.: Health and Medicine

4/17 Project for complete health survey for Sinai

Goal:

- Available medical services and the extent of benefiting from them.
- To determine the most widespread diseases in the Sinai inhabitants
- Environmental health

The research will yield: medical, social and environmental information that will form the basis for future health planning in Sinai.

Elements of Study:

- To perform a complete medical survey to determine diseases that are most common in the inhabitants of the Sinai and the medical services available.

- To formulate a rule for available information that would be the basis for an integrated information system on health conditions in Sinai, and to initiate the health card system for the Sinai population.

E.B.A.P.: LE 250,000 - 24 months

SP.C.C.: Health and Medicine

4/18 Project to study medical plants in the Sinai

Goal: To evaluate the medical effect of some of the extracts from medical and desert plants in Sinai with the goal of having a medical industry that depends on those extracts and in turn to replace some imported medicines with similar effects.

Elements of Study:

To perform a pharmacological survey on both medical plants and desert plants in Sinai after performing some chemical and plant studies to determine their medical usefulness.

E.B.A.P.: LE 50,000 - 36 months

SP.C.C.: Health and Medicine

4/19 Project to determine the percentage of flouride in water sources of the Sinai.

Goal: To arrive at definite recommendations concerning adding flouride to potable water, to determine the quantities necessary to be added to prevent the disease of teeth spotting.

To perform the necessary research, study, and experiments to estimate flouride percentage in water from wells and any other source whether surface running or transported from the Nile, in order to determine the relation between flouride and the disease of teeth spotting.

E.B.A.P.: LE 10,000 - 12 months

SP.C.C.: Health and Medicine

4/20 Project to study vocational injuries in the mining industries of Sinai

Goal: To study diseases that are common among the laborers and the relation between the diseases and the health environment of the industries where the laborers work.

Elements of Study:

- To perform surveys to determine the extent of the spread of vocational diseases among workers in the mining industry in Sinai.
- To suggest modifications and health conditions to be met in those industries to maintain the health of the labor force and consequently increase production.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Health and Medicine

4/21 Study on Emergency Medical Services in Sinai

Goal: To design the best planning for emergency medical services whether for citizens or tourists in order to maintain that important economic source.

Elements of study:

- To support emergency services by using the flying service and to ask for the assistance of the military forces in emergencies.
- To support mechanical campaigns, ambulances, and to construct maintenance centers.
- To support nursing schools
- To study the management of emergency services and to tie them into the services for tourists.

E.B.A.P.: LE 10,000 - 12 months

SP.C.C.: Health and Medicine

4/22 Study on poisons of Sinai

Goal: To identify swarms of insects, snakes, scorpions, spiders and their poisons types and to determine if there are vaccines available and to furnish vaccines in emergencies.

Elements of Study:

- To perform studies on insect swarms, snakes, scorpions, and spiders and their types of poisons.
- To determine if vaccines are available for treating those poisons.
- To perform research for preparing those vaccines and to estimate the effectiveness of the vaccines.

E.B.A.P.: LE 30,000 - 36 months

SP.C.C.: Health and Medicine

4/23 Study on the sudden increase in the consumption of medicine and the relation between that and the ratio of increase in disease (the health map)

Goal: To rationalize the long range use of medicine and to analyze the phenomena of increase in medicine consumption, to determine its dimensions, to find out reasons for it, and the probability of continuation, and to suggest solutions to control it.

Elements of study:

- To perform studies based on sound, statistical theories to compare both the health map and the rate of increase of diseases on one hand, and the increase in the rate of medicine consumption, on the other hand.

E.B.A.P.: 24 months beginning 1982/83

SP.C.C.: Health and Medicine.

4/24 Medical and pharmaceutical education, awareness of the use of medicine, and information and its effect on the rationalization of medicine consumption.

Elements of Study:

- To prepare a list of basic medicines in Egypt and to determine the medicines necessary for treating endemic diseases, according to local conditions.
- To modify educational courses in medicine (pharmacology) in both the faculties of medicine and pharmacy.
- To update the constitution of medicine in Egyptian hospitals and to improve constituents.

E.B.A.P.: 48 months beginning 1982/83

SP.C.C.: Health and Medicine

4/25 To improve information system to be capable of storing, feed-back, up-dating research work for medicine and to have easy accessability to researchers.

Goal:

To prevent duplication of research in the field of medicine and to make research easily available to research workers.

Elements of Study:

- To prepare a system of indexing research in all areas of medicine.
- To develop word systems that correspond to scientific and technical expressions and also both industrial and medical applications.
- To prepare summaries of research surveyed
- To prepare alternatives of feed-back for tabulated information.
- To prepare necessary programs to up-date information using the computer.

E.B.A.P.: 24 months beginning 1984/85

SP.C.C.: Health and Medicine

4/26 To study the relation between expenditure and training (in research and development) with the return in production in the sector of medical industry.

Goal: The scientific and technological development in the area of research and medical industrial development, especially that investment in the area is not commensurate to the volume of production in the medical industry in Egypt.

Elements of Study:

To perform a a field survey to evaluate the return of both research and development on the production. To evaluate the relation between expenditure and increase in the scope of research on one hand, and the return on the other. Also, to evaluate the extent of variation on the return if modern systems are used in designing and analyzing semi-industrial and industrial experiments, and in modifying some particular products.

Period of project: 36 months beginning 1982/83.

SP.C.C.: Health and Medicine

4/27 To benefit from medical plants with high economic return which grow in Egypt by furnishing products to the medical industry.

Goal: To participate in improving the economics of medical plants and to develop local technology in the area of extracting products from the plants.

Elements of study:

- To encourage the research concerned with extracting the useful

materials from medical plants, especially research work on the experimental level with the aim of developing the required local technology.

Period of Project: 48 months beginning 1982/83

SP.C.C.: Health and Medicine - Food and Agriculture - Basic Sciences

4/28 To study rubber requirements for medicine and medical usage.

Goal:

To develop and furnish local technology to process an imported product. This will add a new economic activity to the other rubber industries already present in Egypt.

Elements of Study:

- To manufacture bottle covers from either natural or artificial rubber, in addition to filling materials for oxidation.

Period of Project: 24 months beginning 1982/83.

SP.C.C.: Health and Medicine

4/29 To study the bio-availability and treatment effectiveness of certain medicines.

Goal: To promote the effectiveness and safety of medicine and to rationalize similar medicines by limiting their number.

Elements of Study:

To study the phenomena of the differences in bio-availability - and its dimension - in local medicines. This will be performed on some chosen medicines, especially those used in critical cases.

SP.C.C.: Health and Medicine

4/30 To study the reaction between medicine and popular foods and the endemic diseases of Egypt.

Goal: To rationalize the use of medicine.

Elements of Study:

To pursue the relation between medicine - especially that used to treat endemic diseases - and popular foods in the country.

P.O.P.: 48 months beginning 1982/83

SP.C.C.: Health and Medicine

4/31 Study on the stability of some medicines

Goal: To rationalize medicine industry, to increase safety in medicine, and to stop producing some types of medicine.

Elements of Study:

To perform surveys on the stability of Egyptian medicine, in addition to studying the effect that light, humidity, and different temperatures have on both the chemical and physical stability of some particular medicines.

P.O.P.: 48 months, beginning 82/83

SP.C.C.: Health and Medicine

4/32 To study the safety level of medicines taken by injection and medicines given in solution and the relation to environmental conditions.

Goal:

To participate in technological development in areas of production of medicines, to promote the safety of both medicines of injection and in solution, and to choose the safest zone (environmentally clean) for their production.

Elements of Study:

To perform a field study on some of the individual units to check the effect of environmental pollution on the small areas where medicines are produced (areas of medicine production that require certain qualities for air and water). To determine the best procedure to limit the effect of pollution under local circumstances.

Period of Project: 24 months beginning 82/83

SP.C.C.: Health and Medicine

4/33 Study on plasma alternatives

Goal: To develop local plasma alternatives since there is a factory constructed for that purpose and because of expansion of production lines in some medicine factories.

Elements of Study:

- To determine the natural plasma constituents for Egyptians and to compare them with other parts of the world.
- To evaluate and to compare different plasma alternatives, especially those that have a large medical capacity for carrying oxygen to the red blood cells.

P.O.P.: 24 months, beginning 82/83

SP.C.C.: Health and Medicine

4/34 Study on medicines that are added to animal fodder and their effect on the health of Egyptians

Goal:

To survey wastes of some medicines, such as antibiotics and sulfa compounds in both meat and milk of farm animals, and meat and eggs of poultry, and to compare the levels with internationally accepted limits.

SP.C.C.: Health and Medicine - Agriculture

4/35 To study the development of medical compounds from Egyptian raw materials, wastes, and intermediate products.

Goal:

To make the best use of some Egyptian raw materials, wastes, and intermediate products to develop some medical or pharmaceutical compounds to replace imports.

Elements of Study:

- To perform studies and research concerning development of some medical compounds as mentioned above.
- To perform some preliminary tests
- To perform preliminary feasibility studies

Period of Project: 48 months beginning 1982/83

SP.C.C.: Health and Medicine

4/36 To study the possibility of manufacturing alternatives to baby milk.

Goal: To save part of the subsidy as the price difference in imported milk.

Elements of study:

- To perform some studies and research to develop baby milk alternatives at a reasonable cost and with high nutritional content, especially with elements that have proved to be scarce in Egyptian food sources.

SP.C.C.: Health and Medicine

4/37 Study on the needs of the elderly people for both medicine and food.

P.O.P.: 24 months beginning 1982/83

SP.C.C.: Health and Medicine.

4/38 Projects under consideration

Research for other national diseases.

Goal: To study the immunity of Malarial parasites to medicine and physiological diagnosis of Amoeba

5. Environment

5/1 Technology for potable water treatment

Goal: To survey the quantity and type of pollution in source of drinking water, to choose the most suitable technology for treating the water to achieve the desired levels of quality, and to improve the level of present technology to attain the desired level of efficiency.

Elements of Study:

- To perform regular analysis for organic matters, heavy elements, and microbe content (bacterial, virus, mold, protazoa) for water going in and coming out of treatment stations. (These stations are geographically distributed to represent all zones of Egypt.) To determine the effeciency of technology used in treating water. To perform both laboratory and field experiements that aim at improving the efficiency of the technology.
- To analyze water from wells and to choose the proper technology to limit the iron and manganese contents to the acceptable levels under different conditions of well discharge and the iron and manganese salt contents.
- To perform a special study to determine the extent of pollution of potable water with pesticides (and others) during the year. Samples taken should represent villages and cities to identify the volume and type of pollution in different seasons.

- To construct a central unit where all information is collected and where coordination is done.
- To perform applied research in the area of treating potable water mixed with oil. This problem is typical of the Red Sea Governorate.

E.B.A.P.: LE 670,000 - 36 months

SP.C.C.: Environment

B.A.: National authority for potable water and sanitary drainage - Ministry of Construction and New Communities - Local governing authorities

5/2 Technology for treating industrial wastes

Goal: To evaluate the efficiency of both petrochemical and biological treatment for wastes in order to choose the most suitable available alternatives.

- To prepare design for treatment units
- To study the economical feasibility of collecting wastes and recycling them.
- To present some practical models for recycling water from industrial processes and the effect of that on the quality of the product.
- To design a data bank for sources of industrial pollution, and to use the data when preparing the pollution limits accepted for basic industrial activities in Egypt.

Elements of Study:

- To perform a survey for factories (including the oil sector) in order to list the priorities of factories to be included in the research, to construct treatment units at the sites of those factories in order to choose the best technology to be used which suits the nature of the industrial waste.

- To perform a complete analysis for the waste resulting under different conditions of operation, and to remove all substances (in solution, or in suspension) by different processes.
- To perform preliminary studies for reuse of water in some industries, such as paper industry, food industires, and to check the possibility of reusing the cooling water of the Abu Keer fertilizer factory.
- To evaluate the quality of industrial products resulting after applying the treatment technology, and to identify the extent to which pollution rates decrease as a result of operating the treating units.

E.B.A.P.: LE 1,643,000 - 48 months

SP.C.C.: Environment

B.A.: National authority for potable water and sanitary drainage - General authority for sanitary drainage - General authority for industrialization (GOFI)- industrial sectors where the project will be implemented - Ministry of Health - factories in Abu Keer area.

5/3 Reusing water for agricultural purposes

Goal:

To determine the best style for reusing water (resulting from both industry and sewers) after treatment - to irrigate agricultural areas, especially in the new communities and new reclaimed land. The study will be carried out in different sites representing different environments (soil condition - type of water - etc.).

Elements of Study:

- To determine the quantities of water resulting from both industry and sewers in the area of the project, to identify their contents, and to study: chemical, biological, and natural properties of the soil where the experiment will be performed.

- To determine the best procedure for treating the water (from industry and sewers) in light of the regular analyses performed.
- To follow-up both health and environmental problems associated with the experiment (use of treated industrial and sewer waters) and to determine the suitable solutions for them.
- To evaluate the suitability of treated waste waters being used for irrigating agricultural products and to evaluate the effect of use of sewage - that results from the treating of sewer water - as fertilizer.
- To study the effect of using treated waste waters on the chemical, biological, and natural properties of the soil.
- To identify the best crop pattern in the experimental farm which will use the treated water.
- To choose the most suitable irrigation method in the experimental farm which will use the treated water and its affect on the ground water.

E.B.A.P.: LE 300,000 - 48 months

SP.C.C.: Environment - Food and Agriculture - New Communities

B.A.: GOFI - Ministry of Construction and New Communities - General authority for sanitary drainage

5/4 Diseases associated with types of work

Goal: To identify the rate of injuries associated with some industries that are known to expose the labor force to chronic symptoms of phsychological, natural, and chemical nature. The scope of this study is wide open for different industries in different geographic locations of different types.

Elements of Study:

- To perform environmental tests as to the noise level, temperature, humidity, and chemical concentration in the sites.

- To prepare a clinical questionnaire sheet about the exposure to different effects with special emphasis on: urine, diabetes, varicose veins, high blood pressure, stomach ulcers, and heart diseases.
- To perform lab tests for workers, to analyze the results statistically, and to draw the results according to which recommendations and regulations will be introduced at the different work sites.

E.B.A.P. LE 580,000 - 60 months

SP.C.C.: Environment - Health and Medicine

B.A.: GOFI, industrial establishments, especially those in the area of the test, and the oil sector.

5/5 To raise the efficiency of performance and to increase the production through studying the human effort exerted in the industrial field.

Goal: To evaluate different factors that affect the production of the laborer, such as human, mechanical, managerial, and environmental factors. To stress the importance of efforts in working areas with high temperatures.

Elements of Study:

- Environmental studies to determine temperatures in different working areas subjected to high temperatures, and to measure the degree of humidity in some of the areas.
- Clinical and laboratory studies to estimate tension due to the heat.
- Efficiency of performance by laborers under the environmental conditions at the sites.

E.B.A.P.: LE 400,000

SP.C.C.: Environment

B.A.: GOFI, Industrial establishments cooperating in the carrying out of the study.

5/6 Determining the natural rate of the koline enzyme in blood.

Goal: To determine the natural rate of the koline enzyme in blood which is affected by pesticides (and other pollution factors), and to set rules for measuring the level.

Elements of Study:

- To choose a sample of citizens from an area far from being affected by pesticides and other polluting factors, and to determine the level of the enzyme as a base for comparison.
- To collect blood samples and to check levels of enzymes which are affected by pesticides and polluting factors.

E.B.A.P.: LE 30,000 - 12 months

SP.C.C.: Environment - Health and Medicine -

B.A.: Medical services authorities and health insurance authorities

5/7 A survey of vocational dangers in different industries on the national level

Goal:

To determine different industries in Egypt and chemical matters that are used in those industries and to identify dangers that workers are subjected to in each industry so that a data bank on chemical pollution in industrial environments in Egypt is made available.

Elements of Study:

1. To determine all different industries in Egypt in both the public and private sectors.
2. To choose samples representing those industries and to survey the different chemicals used with associated vocational dangers to laborers.
3. To formulate a plan for a program for an information and data unit that will be in contact with international programs concerned with chemicals that are dangerous to the health and environment.

E.B.A.P.: LE 25,000 - 36 months

SP.C.C.: Environment

B.A.: Industrial sector

5/8 Environmental map for capacities of natural resources

Goal:

To record the natural resources by place, type, and volume. To evaluate those resources in order to list both priorities and manners of developing them besides overcoming the negative effects connected with the development whenever possible.

Elements of Study:

- To collect all relevant studies, maps, and reports prepared on the following resources (while regularly up-dating any changes in the items during the process of study): mineral - oil - water - beach protection - fish - construction and new communities - animal - tourist - grazing - transportation and communications - land - and wild life resources.
- To analyze the reports and the data and summarize it into one report showing the contents, general properties, capacities, problems, and distribution. Concentration should be on resources suitable for the study areas.
- To prepare a map (or more) and a report for every resource for each zone with, if possible, the same scale (1:1,000,000 or 1:500,000 if necessary) to determine the area and the borders of the area for the resources. One final map will be drawn for all resources with a scale to be agreed upon - which will include sufficient information (collected from the other maps) to permit its use by experts for both economic planning and infrastructure.

- To divide the job into stages according to geographic locations as follows:

Sinai: It is suggested that its map be prepared in the first year because of national priority and what Sinai offers in resources.

Northwest coast: Maps suggested to be done in the second year.

Eastern desert from the valley to the Red Sea and all the way south to the borders.

Western desert

Delta and the valley

E.B.A.P.: LE 1 Million - 60 months

SP.C.C.: Environment, Food and Agriculture, O.,E., M.W., new communities.

B.A.: All concerned ministries and companies and production sector as follows:

- Ministry of Planning
- Ministry of Construction and State Ministry for Housing and Land Reclamation
- Ministry of Agriculture and Food Security
- Sector for Oil and Mineral Wealth.

5/9 To evaluate the deterioration of productivity of irrigated land associated with environmental pollution .

Goal:

To evaluate the deteriorating of productivity of irrigated land associated with pollution factors and to find best ways to avoid or to limit it.

Elements of Study

- To collect the previous data prepared by research centers and Egyptian universities, and to contact foreign research institutes that are interested in the same topic to follow-up on the changes in the style of performing the studies.
- To perform a statistical study on every type of pesticide, their amounts used in Egypt, including the ones that are no longer used, showing the number of years they were used. The study should include amounts of those pesticides that were used for every feddan of the irrigated land per year (the amounts for both pesticides in use and ones that are not in use anymore).
- To divide the irrigated lands in Egypt into zones according to the amounts used, estimated in liters (or kilograms) per feddan per year during the last ten years.
- To take soil samples regularly from different depths, in each zone, to indicate the effect on the microbiological, chemical, and physical properties of the soil.
- To choose two zones of irrigated lands whose source of irrigadtion is constantly polluted and to take soil samples (regularly at timed intervals) at different depths and to compare the results of the analysis with samples of zones nearby whose water source is not polluted in order to investigate the effect that polluted irrigation water has on soil properties.
- To divide the irrigated lands in Egypt according to both quantity (kilogram) and type of azotic fertilizer added per feddan per year.

- To choose sites that use the same azotic fertilizer and other sites that use combinations of azotic fertilizers and to continue to use the same quantities of fertilizer at each site for at least four years to investigate the effect of the poisons associated with some azotic fertilizers on soil properties (microbiological - chemical - physical).

E.B.A.P.: LE 250,000 - 60 months

SP.C.C.: Environment - Food and Agriculture

B.A.: Agricultural production sectors

5/10 Study to form the national organization for protection of nature and the national bank on environmentally inherited matters.

Goal: To form the national organization for the protection of nature on land and sea and to form the national bank for natural resources.

Elements of Study

- To review species which are becoming extinct that have samples either inside or outside of Egypt.
- To evaluate the suitability of the present environment for reproduction and to perform studies on ways to increase them.
- To form sanctuaries and to transfer species which can be transferred to them, especially those species that are endangered and which have pure genes.
- To encourage the nature sanctuary agreed to by UNESCO in El Ameed (west of Alexandria) and to follow-up on environmental conditions for biological types in it.
- To choose two zones along the Red Sea and to develop them into sea life sanctuaries where all environmental information will be collected and sources of pollution will be determined.

- To study the system of managing each of the sanctuaries and maintaining them.

E.B.A.P.: LE 400,000 - 36 months

SP.C.C.: Environment

B.A.: Nation

5/11 Studies to support and to improve courses in environmental education in the different stages of eduction.

Goal: To study and support courses in environmental education in different stages of education and to put forth new programs and to test those programs.

Elements of Study:

- To survey the present environmental education courses in different stages of education (kindergarten - primary - preparatory - secondary) with all their different branches, and to offer new courses and books for teachers and students.
- To formulate a new training program for teachers to be implemented in cooperation with the Ministry of Education.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Environment

B.A.: Ministry of Education.

5/12 Study about courses oriented to environmental sciences in different colleges and institutes of teacher training, with the aim of modifying the courses.

Goal: To survey the educational courses connected with environmental sciences in the different institutes of higher education in Egypt and to support and improve the courses.

Goal: To survey the educational courses connected with environmental sciences in different institutes of higher education in Egypt, and to support and improve the courses.

Elements of Study:

- To study the extent of connection between university education with environmental sciences, and how to modify the courses to cover environmental information, experience, skills and values; or design new courses for the environmental sciences.
- To review experiements and efforts in foreign countries and the studies performed by UNESCO, international research centers for higher education in the field of environmental education.
- To prepare courses on environment for the department of environmental sciences at the senior level of education in universities and institutes.
- To perform a field survey as to ways and means and subjects that require graduate student registration for Ph.D. and M.S. degrees in field of environmental sciences.
- To write and translate textbooks for the course work suggested for different faculties.

E.B.A.P.: LE 150,000 - 60 months

SP.C.C.: Environment

B.A.: Egyptian universities

Projects under study:

5/13 To prepare a review of the studies performed by foreign consulting firms, Egyptian consulting offices, and Egyptian governmental authorities on handling and recycling solid wastes (garbage). The review would be the basis for research work in that area.

Estimated budget: LE 10,000

5/14 To prepare a national plan for study of sand dunes and their movement.

Estimated Budget: LE 10,000

Preparations are currently underway for a scientific review financed by the Academy (LE 5,000). It is hoped that it will be ready in 1982.

5/15 To prepare a research plan and integrated studies on the environmental effects of the Qattara depression project.

5/16 To prepare a study on national legislation about environmental effects of development projects.

Other research areas currently under preliminary studies within a budget equals 20 percent of the total research budget.

5/17 A: To build environmental models.

5/17 B: To design an information system for environmental systems and to study the analysis of the quality of the water from the Nile.

5/17 C: To take environmental considerations into strict account in the feasibility studies of economical development projects.

5/17 D: The role of national legislation in protecting environment

5/17 E: To put more interest in legal studies on environment.

5/17 F: Social affairs in the study of environment

The area of Infrastructure

6. Transportation and Communications

6/1 Vehicles and their effect on environmental pollution (pollution and noise)

Goal: To determine the effect of operation of all different types of vehicles on noise and pollution in the environment, to identify reasons behind noise and pollution, to analyze the results, and to recommend suitable scientific and practical solutions to limit their effect.

Elements of study:

1. The factors that affect the pollution level caused by car exhaust are: type of fuel used, speed of cars, their age, kind and model, and power and size of motor. The research needs following-up with precise instruments, special equipment, and to have the test performed in different locations. The following items, in particular, have to be performed:

- A study to compare the harmful effects of both solar and benzene as fuel in all different aspects. One fuel could have a small immediately visible harm from one of the gas products. However, another gas product may not have an immediately visible harm though much harm could occur from its accumulation.

- A study to compare the percentage of harmful gas products in exhausts from different cars, of different age, different motor size and at different speeds.

- A study to compare the percentage of harmful gas products in some of the important squares and intersections on different days, and at different times of the day.

- A study to determine the means to decrease the percentage of harmful gases in vehicle exhausts by installing filters, or by any other means.

. 2. Noise: The factors governing noise are street width, height of buildings, type of moving vehicle -car-bus-tram- and type of horn used. The research work requires following-up with precise instruments and special equipment. The research should be carried out in a sufficient number of areas to produce contour maps for the noise level in Cairo. This will make a study of urban planning possible.

E.B.A.P.: LE 195,000 - 24 months

SP.C.C.: Transportation and Communications - Environment

6/2 Determining coefficients of operation, performance, and maintenance for transportation vehicles to be used as a basis for design of maintenance shops and their volume.

Goal:

To improve the economics of operation for different transport vehicles on different roads and to determine the ways to achieve ideal performance.

- To standardize procedures for necessary services for the transport fleet to raise the technical efficiency for each type of vehicle through defining: service - routine maintenance - emergency repairs - extensive repairs.
- To list the standardized performance coefficients which connect different operating conditions and both service and maintenance periods to achieve standard economic operation.

- To list the recommendations as to the effective specifications in determining coefficients for standard performance for vehicles under different operating conditions.
- To list technical basis for routine maintenance, and protective maintenance and repair technology in the Egyptian environment to improve safety and economics of operation.

E.B.A.P.: LE 120,000 - 30 months

SP.C.C.: T.A.C.

B.A.: All public and private sectors and government companies that deal with a large transportation fleet.

6/3 Determining the effect of increasing axle loads from 10 tons to 13 tons.

Goal: To study the effect of increasing axle loads to 13 tons on the existing network of paved roads and the specifications of existing paving and maintenance procedures.

- To study the need for the increase in axle load according to the present transport volume, and the effect of increase in axle load on transport.
- To determine the necessary changes as a result of increasing axle loads, and to determine both the geometrical and structural specifications for roads.
- To study the effect of increase on the economy of transportation on highways and the effect on the national economy.

Elements of Study:

- To survey the volume, specifications, and load capacity of the transport fleet.

- To examine the present network of paved roads and determine if they can support the new axle loads.
- To determine the volume of transport by road.
- To study the effect of increasing axle load on the vehicles of the transport fleet.
- To study the effect of increasing axle load on the vehicles of the transport fleet.
- To study the effect of increasing axle load on the present road network, and road requirements to yield a longer life time.
- To determine the effect of increasing axle loads on the specification of constructing new roads.
- To study the effect of increasing axle loads on the cost of freight transport.
- To perform analytical and comparative studies.
- To discuss and evaluate the results and to introduce necessary suggestions.
- To write the final report.

E.B.A.P.: LE 606,000 - 24 months

SP.C.C.: T and C

B.A.: Ministry of Transportation, Roads and Bridges Authority, Road transportation companies, private sector for road transportation, national economy, and traffic departments

6/4 Effect of vibrations on motive power and electrical instruments.

Goal:

- To decrease the rate of malfunction of electromotive power motors.
- To decrease the rate of consumption of wheels for vehicles using electric power.

- To redesign the suspension of the electric motor and other parts affected by vibrations.
- To determine the life time of worn out parts to standardize the protective maintenance for those type of motors.
- To formulate the testing procedures for electric motors to suit the Egyptian environment.

E.B.A.P.: LE 80,000 - 24 months

SP.C.C.: T. and C.

B.A.: Simaf, public transport authority in Cairo, public transport authority in Alexandria, (underground metro in the future)

6/5 Sand dunes and airborne sand and their effect on roads, railroad tracks, and airports in the desert areas with means of protection.

Goal:

The research aims at protecting roads, railroad tracks, and runways by developing scientific methods to decrease the accumulation of sand. The research also aims at determining the extent of the problem and its effect on the national economy.

Elements of Study:

- To survey the areas and constructions that are subjected to sand accumulation.
- To evaluate the damages due to sand accumulation and their economical effect.
- To sruvey methods used to treat the problem and the results.
- To review and collect studies, lab and field tests, relevant to the problem that have been performed in different parts of the world.
- To determine scientifically sand movement and its extent.

- To survey all known methods of counteracting the problem according to conditions of the site, and type of the structure.
- To develop new methods, either by stabilization of sand or by modifying the design and alignment.
- To economically evaluate the results.

E.B.A.P.: LE 129,000 - 36 months

SP.C.C.: T. and C. - environment - O.E. & M.W.

B.A.: Transportation sector

6/6 Study on different land uses and relation to both trip volume and type in the greater Cairo area.

Goal:

To estimate the ideal denstiy and type for suitable land use along available streets.

Elements of Study:

- To determine all types of different land use and their operational characteristics.
- The study includes dividing greater Cairo into zones of similar character and of land use, income level, population density, and car ownership, or a combination of those characteristics.
- In every zone a field study will be performed by social surveyor to identify: number of individuals, and commodities used for each type of land use. Four elements will be identified for individuals:
    - Level of family income
    - Number of persons in the family
    - Number of cars owned by the family
    - Number of daily trips and mode of transportation used.

For the commodities, the following factors will be considered:

- Type and volume of commodities
- Rate of arrival and departure of commodities from the zone
- To store those data and test them during the period of research by a microcomputer, and to determine rates for land use.

E.B.A.P.: LE 125,000 - 24 months

SP.C.C.: T. & C.

B.A.: General authority for urban planning - general transport planning authority - Cairo and Giza governorartes - Ministry of housing and construction

6/7 Traffic assignment between different modes of transport, effect of distribution on national economy, and guarantees that the transportation will be executed as planned.

Goal:

To plan transport and to distribute the volume over different modes.

E.B.A.P.: LE 129,000 - 36 months

SP.C.C.: T. & C.

B.A.: Transportation sector

6/8 A study on types of fuel, oil, air and oil filters, and greases used in transportation modes and their effect in improving the economy of operation by lengthening the lifetime of the motor.

Goal: To increase lifetimes of motors under different operating conditions for passenger transport modes, and to decrease the rate of depreciation of passenger vehicles which will result in decreasing volume of imports of both cars and spare parts.

E.B.A.P.: LE 110,000 - 36 months

SP.C.C.: T. & C. - Oil, Energy and Mineral Wealth

B.A.: Transportation sector

6/9 To develop coefficients and mathematical models for postal service units (inside cities) and to evaluate the economics of the service.

Goal:

- To determine rate of growth of postal volume according to economic and social factors
- To determine the ideal location of service for:
  a. Postal units inside cities
  b. Postal units on the national level

and ideal solutions for coordination between those units and unloading, distribution and transportation networks (taking distance into consideration) to achieve the economic balance of postal service.

Elements of Study:

- The ideal distribution of postal units and postal traffic centers to determine sites of each.
- Forecast procedure for the service needed in the future.
- Scientific basis for taking the right decisions in planning new postal units or replacing existing units.
- Listing and categorizing postal units according to similar characteristics
- Determining the best population number to be served by the unit according to world standards.
- Determining the average area (in square kiliometers) for placing a mail box.

- Determining the average number of population to be served by one mail distributor according to the nature of the area (commercial - downtown - villas - apartment buildings, etc.)
- To coordinate the use of mail moving equipment to a high efficiency
- To use means of cutting down on tranport expenses
- To choose mail tranporting units with modern technical specifications and of different types.
- To perform the economics of postal service, both the cost and the benefit of this service based on the following categories:

  . Basic mail services, such as: letters of all types - printed matter - parcels, postal money orders, etc.

  . Supplementary services such as: post office savings - mail networks, etc.
- To estimate the cost of each service and the probable return of each, and what some services (with a high return) can offer to offset some deficit in other services.
- To evaluate the effect of a wide variety of postal services on both improving the service and increasing the return of postal establishments.
- To determine the basis for the right decisions, such as: expanding a particular service because it is profitable, or increasing the fees of another because it is losing money, or the manner of offsetting the deficit (by passing the deficit to the national budget since there are national reasons to keep the fee at a certain level - below cost), etc.

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: T. & C.

B.A.: All national agencies

6/10 Furnishing the telephone service to villages and ezbas (ranches) in rural Egypt.

Goal:

- To furnish telephone service to villages and ezbas in Egypt at an economical level suitable for the expected national network.
- To develop models of electronic central exchanges, designed and adapted in the Faculty of Engineering of Cairo University to suit the loads expected and the telephone lines in different villages.
- To study the conditions of local village networks and to develop a model to fit these conditions.

Elements of Study:

- The scientific basis for furnishing telephone service to Egyptian villages in an economical way.
- To prepare models of electronic exchange, with different capacities, that was developed and constructed in the laboratory of the Faculty of Engineering, Cairo University.
- To determine the scientific approach to evaluate the performance of that electronic exchange.
- To determine the scientific method to be followed for the performance of the electronic exchange under operating conditions.
- To list possible malfunctions, to determine the scientific basis for indentification of reasons for malfunction, and to formulate an easy maintenance procedure commensurate with available technical experience in rural areas.

E.B.A.P.: LE 124,000 - 24 months

SP.C.C.: T. & C., New Communities

B.A.: National authority for communication and industry, communications sector.

6/11 To study both communications planning and systems for new communities

Goal:

- To divide the new communities into groups according to their pattern of communication inside the community and the system between them and the rest of the nation.
- To choose the most suitable way to forecast the demand growth on telephone service for every group of new community, and the best method for both long turn and short term planning.
- To choose the most suitable communications system (both inside the community and between the community and the national network), and to coordinate between the available communications network for the national communication authority and the radio broadcasting (and television) services to furnish the service of communication between the community and the rest of the country.

Elements of Study:

- The scientific basis for grouping the new communities (according to communication system inside the community and between the community and the rest of the country)
- To form the forecasting groups as to the demand growth on the service in the different communities.
- To study the communication systems and their designs to choose from among them the most suitable for each new community.
- To study both the communications network and the broadcasting network for radio and television (existing and expected in the future), and to study the possibility of using them to connet the new communities with the national communications network.

E.B.A.P.: LE 168,000 - 24 months

SP.C.C.: T. & C. - New Communities

B.A.: National Communications Authority, Radio and Televsion Union

6/12 To study inteference and to design a frequency distribution system for micro-wave connections on the national level.

Goal:

To study the interference levels in the frequency ranges assigned for the micro-wave connections; to study the frequency distribution system in case of assimilated connections, the case of digital connections, and in case of using the same frequency by a mixture of assimilated and digital connections. This will improve the efficiency of performance and the ideal use of frequencies which will allow expansion in the capacity of the microwave connections.

Elements of Study:

- To study types of interference whether in the same path, crossing pathes, or neighboring paths.
- To draw a map for the radiation levels in different zones and with different frequency ranges.
- To study the capacity of ranges in case there are different digital modifications and the effect over frequency distribution in case it is used for ranges partially occupied by assimilated connections.

E.B.A.P.: LE 160,000 - 36 months

SP.C.C.: T. & C.

B.A.: National Communications Authority - Radio and Television Union - Armed Forces

6/13 To study the effect of dying out on microwave with direct visibility.

Goal: To study, statistically the effect of dying out on sets with direct visibility and how this effect is related to climatic conditions at frequencies between 6 and 11 Megahertz. The importance of the research is reflected by the benefiting agencies since it will help determine the specifications to the new microwave projects and also it will help introduce the suitable technical solutions for improving the service on new microwave connections and in addition will insure the Armed Forces communication on their own microwave connections.

Elements of Study:

- To determine the percentage of time when the intensity of dying out exceeds a certain limit during the year.
- To determine the statistical relation between the intensity and duration of dying out.
- To study the properties of dying out, during the year and to determine the worst month.
- To evaluate the effect of different climatic conditions on the statistical properties of dying out.

E.B.A.P.: LE 295,000 - 36 months

SP.C.C.: T. & C.

B.A.: National Communications Authority - Radio and Television union - Armed Forces

6/14 To survey studies and research in the area of communications in Egypt.

Goal: To survey and collect research and studies in the field of communications, and to arrange them in such a way to make it possible to refer to them whenever it is needed, in order to benefit from them in the research that is to be carried out by the academy.

Elements of Study:

- To define study and research in this field.
- To survey organizations that could be perfroming studies and research or organizations benefiting from them.
- To prepare models for surveying research and studies in the field of communications.
- To devise the plan for surveying the research and studies, reviewing the data, arranging the data, and indexing them.
- To analyze the data and design a system for storing and feeding back to permit quick and accurate usage.
- To form a system for updating the data.
- To prepare the final report.

E.B.A.P.: LE 30,000 - 6 months

SP.C.C.: T. & C.

B.A.: All organizations that benefit from research and studies in the field of communications, such as Academy of scientific research, research cneters in the communications field, national communication authority, radio and television union, etc.

6/15 To find the most suitable technical solution to use the temporary central exchanges in the telephone network in Alexandria.

Goal:

Alexandria is distinguished by the fact that it extends along a tight corridor parallel to the Mediterranean Sea. Consequently, all the central exchanges fall along that line, approximately. This results in a long line of connection between the exchanges on both ends of the city. This requires a study for the construction of one (or more) central exchanges and their reorienting to result in a savings in investment used for the communications network in Alexandria.

Elements of Study:

- To study the distribution of load between the present exchanges and the ones planned for execution until 1987.
- To evaluate the present connecting network and its capacity.
- To perform both technical and economical studies needed to construct one (or more) transfer/centrals in Alexandria, to determine their location, and to determine the number of connecting circuits with system load orientation.

E.B.A.P.: LE 30,000 - 6 months

SP.C.C.: T. & C.

B.A.: National Communications Authority - Alexandria Governorate

6/16 To survey Egyptian scientific expertise in the field of communications

Goal:

- To survey and collect Egyptian experiences in the field of communications, to arrange them in such a way to make it possible to refer to them when needed in order to benefit from them in the studies to be carried out by the academy.

Elements of Study:

- To define an "expert" in the field of communications
- To survey research organizations in the field of communications.
- To formulate a model for surveying experiences in the field of communications.
- To devise the plan for surveying, reviewing data, arranging data, and indexing data.
- To analyze date, and design a system for storage and feeding back to permit quick and accurate usage.
- To devsie a system for up-dating data.
- To prepare the final report.

E.B.A.P.: LE 30,000 - 6 months

SP.C.C.: T. & C.

B.A.: All organizations that need to either know or choose certain experiences in the field of communications, such as: The Academy of Scientific Research - research centers in the field of communications - National Communications Authority - Radio and Television - Postal Authority, etc.

6/17 To study ways and means of securing safety of navigation along Egyptian coasts in both national and international waters.

Goal:

- To test the most suitable navigation equipment for performance and resistance to different weather conditions.
- To encourage navigation in the country's seaports.
- To ensure safety of ships crossing the Suez Canal and ships in the ports.

E.B.A.P.: LE 150,000 - 24 months

SP.C.C.: T. & C.

B.A.: Ministry of Martime Transport - Ministry of Oil - Naval Forces

6/18 To study rescue operations along Egyptian coastlines

Goal:

- To save lives through the construction of rescue stations along the shores of the Mediterranean Sea and the Red Sea and to equip the stations with the necessary equipment and instruments.
- To build two rescue stations for the rescue of ships and to furnish the stations with necessary equipment.
- To provide the necessary equipment for speedy rescue operations (airplanes - rapid communications systems - quick emergency medical services, etc)

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: T. & C.

B.A.: All national agencies because this is a vital project in general, but with more concern to the governorates bordering on the sea.

6/19 To study increasing the efficiency of the Port of Alexandria by connecting the Nubaria Canal to the Port.

Goal:

- To increase the efficiency of the Port of Alexandria without interfering in river transportation.
- To increase the depth of the Nubaria Canal and to raise the level of water, which in turn, increases the efficiency of river transporting unit working in the Canal.

- To direct fresh water - wasted into the sea at the lock at point 100 Km - into the Canal.
- To furnish an additional fresh water supply to the city of Alexandria.

E.B.A.P.: LE 50,000 - 24 months

SP.C.C.: T. & C.

B.A.: Ministry of Transportation, Communications, and Maritime Transport - Ministry of Irrigation - Governorate of Alexandria.

6/20 To study both preventing and fighting sea water pollution along Egyptian shores and ports.

Goal:

- To establish a center for reporting pollution and its level along the Mediterranean and other locations along the Red Sea.
- To establish emergency plans to face any dangers that result from accidents occuring to oil carriers. Accidents by oil carriers can cause great damage over long periods of time unless they are handled immediately.
- To study the best means and equipment to be used to coordinate with regional and international organizations.
- To study the areas rich in natural marine resources in order to plan for their protection.
- To establish training centers to prepare the necessary technical cadre for polution control stations at sea and on land.

E.B.A.P.: LE 100,000 - 24 months

S.P.C.C.: T. & C. - Environment - Oil, Energy and Mineral Wealth

B.A.: All national agencies, especially governorates having coastlines.

6/21 To determine the ideal capacity of ships used for transporting Egyptian freight. The factors that will be studied include: type of ship - navigational lines on which ships operate - speed - ship capacity- and type of freight.

Goal:

- To determine the ideal capacity of the national fleet indicating the number of required ships according to volume of freight, type of ship, capacity, new navigation lines, with the following targets in consideration: to tranport most of the national freight, to develop the national ship industry, to open a new scope for Egyptian labor, and to gain an economic national return.

E.B.A.P.: LE 50,000 - 24 months

SP.C.C.: T. & C.

B.A.: Ministry of Maritime transport, and the economy sector.

6/22 To determine the needs of national aviation transport and connecting it to international transport (forecasting needs of national air transport services for 10 years)

Goal:

- To forecast, in a scientific manner and in light of air transport probabilities in Egypt, their connection to international transport.
- To meet the needs of some Governorates for connecting them with Cairo.
- To study the volume of internal air transport expected in the near future and to survey the origin and destination of passengers in order to determine the points to be served, and benefits expected with the adaption of the flying service.
- The study aims at obtaining the necessary data for choosing sites for airports with better economic feasibility.

E.B.A.P.: LE 50,000 - 18 months

SP.C.C.: T. & C.

B.A.: Ministry of Civil Aviation - Ministry of Local Government - Ministry of Construction and New Communities.

Suggestions for short range studies

6/23 Problems of freight handling in Egypt (Feasibility study on introducing door to door service using standardized specifications)

6/24 Development of the ship industry with the aim of furnishing Egyptian needs as a first stage, then competing for international market as a second stage.

6/25 Studying the requirements of local steel industry for scrap metal from ships and studying the economics of breaking up ships to obtain scrap metal for that purpose.

6/26 Studying and preparing the time schedule for Egyptian flag carriers waiting in Egyptian ports in order to keep that time to a minimum.

6/27 An analytical study for Egyptian imports and exports until the year 2000. The study should have a scientific basis since it will be used to form plans for supporting the national maritime fleet of different types of ships.

7. Housing and Construction

7/] The second stage of the research on rural housing and the development of the Egyptian village.

Goal:

- To prepare suggestions and recommendations as to both the architectural and planning changes that can be followed in the development of the village and the design of its houses. From the architectural point of view, analysis and comparison has to be performed between the present conditions in the Egyptian village and the ideal condition that the Government has tried to implement in order to achieve the best coefficients for the design, whether in a conventional village community or for a community living on reclaimed land. From the planning point of view, it is worth pointing out that the suggested standard housing unit in the communicty will develop the village into a point of attraction not repulsion - which, in a way, will help solve the problem of the cities. In addition, village development will create an independent integrated society, especially after extending electrical power to the villages. The best village development plan will have to orient itself to two opposing goals, maintaining the agricultural land, and in the meantime, furnishing suitable housing and services for the people.

E.B.A.P.: LE 200,000 - 24 months

SP.C.C.: Construction and Housing

B.A.: Ministry of Construction and Land Reclamation - Construction companies concerned with building in the village - other design agencies (planners and architects)

7/2 Use of solar energy in buildings in Egypt

Goal:

An alternate source of energy is one of the important topics that the world is interested in. Since Egypt enjoys a climate having abundant sunshine over most of the nation during the year, climatic conditions (especially heat) represent a basic element in designing buildings that make use of that source of energy, and to protect buildings from it. Research includes a study about means of controlling the use of energy, to formulate the basis for application, to find ways for protection from excessive solar energy that affects the comfort of people, and to formulate the rules to be applied in designing buildings and urban communities.

E.B.A.P.: LE 150,000 - 36 months

SP.C.C.: Construction and Housing

B.A.: Construction sector - desert governorates

7/3 A study to compare governmental housing and private housing for limited income families in Cairo.

Goal:

To study available types of housing for limited income families in Cairo in order to identify both the positive and negative sides of the housing situation, and to suggest suitable recommendations to raise the level of economic housing. The conventional style of building economic housing - by the government - to offset the shortage of good housing for the limited income families is faced with many difficulties: economic capacity, and the distribution of houses to those with limited income. As a result of the great increase in population in Cairo, the problem of finding suitable housing for limited income groups grows every year. Therefore, the government needs to identify the facts and details of the present experiment in order to adapt the suitable pro-

cedure to solve the problem. The data will be collected through available information and through field research for different kinds of governmental housing and private housing in different areas in order to obtain a true picture of housing for limited income families in Cairo. The research will include: methods of design and construction, building materials used, style of land procurement, infrastructure network (roads, utilities, services), and both the economic and social background of these groups of people. The data will be categorized and analyzed in order to obtain the recommendations necessary to improve housing and housing environment for limited income families.

E.B.A.P.: LE 160,000 - 24 months

SP.C.C.: Construction and Housing - Ministry of Housing, Construction and New Communities - Cairo Governorate - Ministry of Planning.

7/4 Use of interior and exterior space in urban housing.

Goal: To perform a socio-architectural study aimed at meeting the actual needs of an Egyptian family (with different cultural and social backgrounds) through the design of the interior and exterior space of their respective housing units. This can be implemented by identifying the use of interior and exterior space in different types of urban housing (economic housing - average and above average housing) in order to devise suitable standards that reflect the socio-economic standards for the different families (habits - places inside home for performing different activities - furniture used, etc.) The research also evaluates social habits about exchanging visits and the housing plans that the family has for their home.

E.B.A.P.: LE 50,000 - 24 months

SP.C.C.: C. & H.

B.A.: Ministry of Construction and State Minister for Housing and Land Reclamation - Ministry of Social Affairs

7/5 To perform a technical and health survey on the present water treatment procedures.

Goal: To perform health and technical studies to record the condition of treated water and the effectiveness of treating units to economically reach the desired health standards; to formulate long and short term strategies for operation and maintenance (adding or modifying some procedures) to suit the changing condition of the water source - whether from the Nile or underground.

E.B.A.P.: LE 500,000 - 36 months

SP.C.C.: Construction and Housing Ministry

B.A.: Ministry of Housing, National authority for potable water and sanitary drainage - General water authority for greater Cairo - General water authority for Alexandria.

7/6 To perform a technical and health survey for present treatment of water from sanitary drainage.

Goal: To survey all treatment stations for sewage in Egypt; to record their condition and the effectiveness of the stations in their operations; to evaluate them in order to reach the desired health and economic standards; and to formulate both long and short strategies for operation and maintenance (by adding of modifying procedures) to make them suitable to the Egyptian environment.

E.B.A.P.: LE 300,000 - 24 months

SP.C.C.: C. & H. - Environment - Health and Medicine

B.A.: Ministry of Housing - National Authority for potable water and sanitary drainage

7/7 To study the most suitable method for the Egyptian environment to remove iron and manganese from underground water in many areas of Egypt

Goal:

- To collect information previously obtained on Egypt and the world - to choose the information most suitable to use in ridding underground water from both iron and manganese (existing in high percentages) in many parts of Egypt, and to prepare the specifications for the procedures to be followed:

E.B.A.P.: LE 300,000 - 24 months

SP.C.C.: C. & H. - environment - Health and Medicine

B.A.: General water authority for Greater Cairo - National authority for potable water and sanitary drainage.

7/8 To study the effectiveness of oxidying ponds previously constructed in Egypt to rid them of sanitary drainage water.

Goal: To design the style for treating sewage water by oxidizing ponds from technical, health and economical points of view.

E.B.A.P.: LE 300,000 - 36 months

SP.C.C.: C. & H.

B.A.: National authority for potable water and sanitary drainage - High Institute for public health in Alexandria University - Ministry of Housing.

7/9 To study different probable effects on types of pipes used for sanitary drainage, whether in the public drainage network or inside homes.

Goal:

- To choose the most suitable types of pipes; to check their properties (both advantages and disadvantages) in order to formulate the specifications for both laying and maintaining them in the environmental conditions in Egypt.

E.B.A.P.: LE 200,000 - 36 months

SP.C.C.: C. & H.

B.A.: Ministry of Housing - National authority for potable water and sanitary drainage.

7/10 A pilot study on using Nile water that dissipates through the bottom of the Nile section by using wells.

Goal: To use the naturally filtered water without treatment in order to decrease filtering and treatment expenses for waters which contain iron and manganese percentages higher than the permissable rate.

E.B.A.P: LE 500,000 - 24 months

SP.C.C.: C. & H. - Environment

B.A.: National authority for potable water and sanitary drainage

7/11 To prepare specifications for both design and execution of concrete structures.

Goal: To suggest the formation of a committee made up of university professors specialized in concrete structures. Branch committees would spring from it and their duty would be to review and up-date specifications

Then the concerned ministries - each in its own specification - would issue ministerial decrees (that have the power of law) concerning the specifications for design and execution.

E.B.A.P.: LE 300,000 - 36 months

SP.C.C.: C. & H.

B.A.: The nation

7/12 To prepare the specifications for both the design and execution of metal structures.

Goal: To suggest forming a committee made up of university professors specialized in metal structures. Branch committees would spring from it and their duty would be to review and up-date specifications. Then the concerned ministries - each in its own field - would issue ministerial decrees (that have the power of law) concerning the specifications of design and execution.

E.B.A.P.: LE 250,000 - 60 months

SP.C.C.: C. & H.

B.A.: The nation.

7/13 To prepare the specifications for both the design and execution of foundations.

Goal: To study different foundation types currently being used in Egypt, and to evaluate the new types of open piles of different diameters with a big load capacity which seem to suit the new, high-rise buildings, especially since many high-rise buildings are being built now in Egypt. These high-rise buildings need special types of foundations to resist the dynamic wind load and earthquakes. It is only natural to study ways of testing the piles (after execution) and to evaluate both their efficiency and allowable settlement.

7/14 To study the best construction methods and to evaluate their economics.

With the wide variety of new construction methods, it is suitable to study and evaluate them with reference to their advantages, disadvantages, and econimics for a specific job.

E.B.A.P.: LE 50,000 - 24 months

SP.C.C.: C. & H.

B.A.: Contracting companies

7/15 To study maintenance, repair of structural defects and to increase the capacity of existing structures.

Goal:

- Maintenance of existing structures and repair of defects that appear, such as cracks in concrete, rusting of metal or reinforcing bars in concrete, are important subjects that need great experience in their detection and repair.

Checking of structures should not be done randomly. Rather, checking should follow a determined program which advises the engineer on how to follow-up on changes in different parts of the structure. Repairing defects in a structure in an efficient way saves the country the cost of removing the structures have defects and replacing them with new structures. There are some existing structures - such as bridges - that were built in the 1930's to carry loads (and speeds) that were much less than the loads that pass over them now. It is possible that the engineer could present a program to strengthen those bridges to increase their lifetime which would save the country millions of Pounds.

Maintenance and repair of structural defects is becoming one of the issues that developed nations place great interest in so that the danger of those structures collapsing can be avoided.

E.B.A.P.: LE 300,000 - 60 months

SP.C.C.: C. & H.

B.A.: The nation

7/16 To study the increase in salts over existing foundations

Goal: To perform a detailed study on types and quantities of harmful salts on existing foundations in different locations in the country, to uncover some of the foundations to check for erosion taking place, and to present recommendations as to the types of cement that should be used in different soil conditions.

E.B.A.P.: LE 500,000 - 60 months

SP.C.C.: C. & H.

B.A.: Ministry of Housing

7/17 Problems of construction management for projects

Goal:

1. To study types of contracts in the field of construction in order to choose the most suitable - with the help of lawyers.

2. To study different methods of planning, following-up, and performing the economic feasibility study for construction projects.

The report of the World Bank in this field is sufficient at this point. Therefore, simple study sessions are sufficient to introduce the people working in the area to the techniques of planning, following-up, and feasibility studies. The obstacles that limit construction management projects in Egypt can be summarized in the following five points:

- The overall authority of the government
- Insufficient construction resources (labor force - materials - equipment - construction methods - financing)
- Lack of organization and coordination in construction sectors
- Lack of sufficient expansion in the construction capacity

These points were previously presented in the report of the committee of the leaders of the construction industry - formed according to the ministerial decree Number 181 for the year 1978.- about the study performed by experts from the World Bank for construction for industry in Egypt.

E.B.A.P.: LE 200,000 - 36 months

SP.C.C.: C. & H.

B.A.: Ministry of Housing - Contracting companies

7/18 To prepare specifications for design and execution of pre-fabricated concrete structures.

Goal:

Since Egypt now has eleven pre-fabricated factories - bought from different European contries - the issue requires a study to evaluate specifications for design and execution to reach what agrees with the local environemnt.

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: C. & H.

B.A.: Ministry of Construction and State Ministry for Housing and Land Reclamation, pre-fabricated factories.

7/19 To study the properties of mortars and economics of their use with special emphasis on: lime - gypsum - pre-fab mortar.

Goal: To modify the use of mortar technically, as has been done lately in some developed countries - through different channels. For example; to improve the properties of the mortar; to decrease the consumption of cement; to use lime and gypsum; to use pre-fab mortar; to increase types of mortars while determining the most suitable type for each building component, and to formulate the specifications for use of mortar in buildings.

E.B.A.P.: LE 100,000 - 24 months

S.P.C.C.: C. & H.

B.A.: Ministry of Construction and State Ministry for Housing and Land Reclamation - building industry in Egypt

7/20 Building materials for zones of new construction and new communities

Goal:

To determine the most suitable building materials and methods for construction and building in new cities, and to avoid using the conventional materials which may differ from the materials needed in the areas of new construction.

The research includes: field, laboratory, and analytical studies on building materials, to estimate reserves of each material in every zone and to introduce conditions for both design and execution of buildings in each zone.

E.B.A.P.: LE 400,000 - 36 months

SP.C.C.: C. & H. - New Communities

B.A.: Ministry of Construction and State Ministry for Housing and Land Reclamation - building industry in Egypt

* NOTE: Same as project 8/8 New Communities

7/21 Study on concrete additives

Goal:

To determine the technical and economical basis for using concrete additives in order to achieve certail qualities in concrete under local conditions. This requires studying different kinds of additives that have become available in the past few years, determining the extent of their benefit to the local concrete industry, and preparing specifications for their use.

E.B.A.P.: LE 50,000 - 24 months

SP.C.C.: C. & H.

B.A.: Ministry of Construction and Housing - Building Industry in Egypt

7/22 Building materials for rural houses.

Goal:

Scooping out agricultural land to obtain silt to use in mud bricks is developing into a large national problem. Besides importing logs of wood (for ceiling) increases the burden on the national budget and balance of payments. Both issues require the urgent need to develop new building materials for rural housing and avoid using the mud bricks and the wooden logs while improving the other structural components of houses. Because of different local conditions in different regions in Egypt, it is necessary to perform a study on each region - or group of similar regions - to develop a basis for building a rural housing unit in those regions.

E.B.A.P.: LE 200,000

SP.CC. C. & H.

B.A.: Ministry of Construction and Housing - building industry in Egypt.

7/23 Determining the highest percentage of salt to be used in water for both mixing and curing concrete.

Goal:

Since construction has increased tremendously in the new desert area, it is advisable to use locally available water (if possible) there because of the large expenses involved in transporting water from other areas for construction purposes. This in turn raises the cost of construction. It is therefore necessary to test the local water and determine the percentage of salts present to determine in which technical processes the water can be used without affecting the quality of concrete required.

E.B.A.P.: LE 120,000 - 48 months

SP.C.C.: C. & H. - New communities

B.A.: Ministry of Construction and Housing - building industry in Egypt.

7/24 To study production and use of different kinds of bricks and alternatives to red bricks.

Goal: The problem of scooping silt from agricultural land (for use in the manufacture of red bricks) necessitated the search for alternatives. The result was the production of silt bricks (silt from depositions in the desert, not agricultural land). However, time has shown that the investment needed to produce silt bricks is large. While they have good structural properties, their use in non-supporting walls is extremely uneconomical. Therefore, the search is now oriented towards other alternatives, such as: cement bricks, blocks of rock, light weight blocks, and pre-cast wall strips.

E.B.A.P.: LE 80,000 - 24 months

SP.C.C.: Construction and Housing

B.A.: Ministry of Construction and Housing - building industry in Egypt.

7/25 To study producing ferro cement with large portions of iron slag with special emphasis on cement with high resistance to sulfates.

Goal: One goal is technical and that is the production of cement with high resistance to sulfates. This is needed by the building industry in Egypt. Another goal is economical because iron slag is available from local steel furnaces.

To study and evaluate the properties of ferro-cement containing different percentages of iron slag, gradually increasing from 35 percent to 80 percent and to determine the properties that concrete made from this type of cement has and the extent of use and the specifications of surrounding conditions.

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: C. & H.

B.A.: Cement companies.

7/26 To study the use of resins in producing both building and concrete elements, and their economics.

Goal: To determine both the technical and economical bases for using resins in concrete, and in the production of building materials. The program includes types of resins, methods of production adapting advanced modern technology which is used in other nations.

E.B.A.P.: LE 150,000 - 36 months

SP.C.C.: C. & H.

B.A.: Ministry of Construction and Housing - building industry in Egypt.

7/27 To study the control of termites and protecting buildings from their attack.

Goal: It is a well known fact that termites attack and cause much damage to many structures in many regions extending from Alexandria to Aswan. It is necessary to study means to decrease the volume of losses by different means, such as:

- To treat woods chemically to make them immune to attack by termites.
- To devise some type of mortar that is resistant to termites.
- To formulate standard procedures for protecting buildings and their components from termite attack.

E.B.A.P.: LE 200,000 - 48 months

SP.C.C.: C. & H. - New communities - Food and Agriculture

7/28 To study planning in zones of Cairo which are of architectural value.

Goal: To study the planning process in architectural zones in Cairo in order to recommend processes to preserve the valuable relics and also develop those zones (suburbs) in the way of services and utility lines to meet the requirements of modern living.

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: C. & H.

B.A.: Egyptian monument authority - Cairo Governorate

7/29 To study the problems of traffic and parking in Cairo.

Goal: To find solutions to traffic congestion in the city. Many activities are delayed because of traffice and this has a damaging effect on national economy. The problem is caused by limited availability of parking areas, the interference of different types of traffic, and the obstruction of traffic flow in many streets.

The study includes developing a program for planning and organizing traffic and furnishing sufficient number of parking places.

E.B.A.P.: LE 50,000 - 12 months

SP.C.C.: C. & H.

B.A.: Cairo governorate

7/30 Efficiency of management for large cities

Goal: To study planning, management, operation, and maintenance of public utilities and services in large cities where services extend into neighboring towns and villages. To study different management systems that manage both operation and maintenance of utilities, such as: central administrations, local administrations that follow the large city. To choose the most suitable administrations to supervise utilities in the large cities.

E.B.A.P.: LE 150,000 - 24 months

SP.C.C.: C. & H.

B.A.: Capitals of governorates and large cities

7/31 The main features of Egyptian cities until the year 2000, and the possibility of their expansion into neighboring desert lands.

Goal: The study includes: a general review of land use in Egyptian cities, nature of their sites, geographical and historical development, and the possibility of expansion into the neighboring desert in order to achieve a pattern that fits local conditions for large Egyptian cities.

E.B.A.P.: LE 200,000 - 24 months

SP.C.C.: C. & H.

B.A.: Ministry of local governments, and governorates

7/32 Basis and methods of evaluating different suburbs.

Goal: To evaluate some of the old suburbs and suburbs that were developed in the absence of laws dealing with health and other aspects, such as: conditions of buildings and the safeness, utility networks- if they exist - and their efficiency, services and their sufficiency, density of population, etc. This aims at formulating the conditions and measures for evaluating suburbs.

E.B.A.P.: LE 200,000 - 36 months

SP.C.C.: C. & H.

B.A.: Planning agencies and large city councils

7/33 Basis and planning assignments for different planning levels.

Goal: To prepare the basis and planning assignment for different planning levels of the planning body (for housing and other uses), such as: city level - suburban level, with the goal of presenting rates for urban areas and new cities.

E.B.A.P.: LE 200,000 - 24 months

SP.C.C.: C. & H.

B.A.: Urban planning agencies - Ministry of Construction

Projects added at the Fourth Annual Convention of the Council

7/34 To eliminate wastes resulting from the dry manufacturing method of cement.

7/35 Use of iron slag in building materials.

8. New Communities

8/1 To estimate the ideal volume of new communities when first executed, and to study the economics of their construction, utilities, services, and others.

Goal: To correlate between production factors and services factors when planning a new community.

E.B.A.P.: LE 200,000 - 24 months

SP.C.C.: New communities

B.A.: Ministry of Construction and State Ministry of Housing and Land Reclamation

8/2 Basis and factors to be considered when choosing sites for new urban communities.

Goal: To choose these factors.

E.B.A.P.: LE 200,000 - 24 months

SP.C.C.: New communities

B.A.: Ministry of Construction and State Ministry for Housing and Land Reclamation

8/3 Planning and architectural measures to meet climatic conditions and to protect the environment from pollution.

Goal: To choose these factors.

E.B.A.P.: LE 150,000 - 24 months

SP.C.C.: New Communities

B.A.: New communities authority - urban planning authority

8/4 Replacing and renewal and renovations of old suburbs with historical character in the regional medium and small cities of Egypt.

Goal: To preserve cultural heritage in Egypt.

E.B.A.P.: LE 300,000 - 36 months

SP.C.C.: New Communities - Construction and Housing

B.A.: The country, in general - Ministry of tourism - Department of Antiquities

8/5 Use of new types of energy and renewable sources of energy in cities and new communities.

Goal: To rationalize energy consumption for conventional sources. In the meantime, to decrease the volume of consumption through the use of renewable - non-conventional - types of energy, such as: Solar energy, wind, and biogas to meet part of the requirements (lighting - irrigation heating water - and industry).

E.B.A.P.: LE 300,000 - 48 months

SP.C.C.: New Communities - O.E., M.W. - Construction and Housing

B.A.: National economy by easing the burden on energy producing agencies.

8/6 Basis and conditions for design and execution of water and sewer pipe networks.

Goal: To study factors affecting the load distribution on pipes according to the designed depth of pipes underground.

E.B.A.P.: LE 300,000 - 36 months

SP.C.C.: New Communities - Construction and Housing

B.A.: Construction industry in Egypt

8/7 To study methods of developing new communities

Goal:

To analyze rates of growth of: population, income, production, consumption, and investment. To evaluate different tests and the extent of response of: the market, the country, and the communities to planning. One of the topics to be studied is the possibility of moving some industries - which do not have to be in a specific area - to the new communities.

E.B.A.P.: LE 300,000 - 48 months

SP.C.C.: New Communities - Social affairs - Industry - Food and Agriculture - Health and Medicine

8/8* To study local building materials, to evaluate their properties, compared to specifications, to evaluate the feasibility of using them both structurally and economically, to evaluate the technology of their use, and to study the balance between supply and demand for each material.

Goal: To determine the most suitable building materials and methods for construction and building in new cities. The research includes: field - lab - and analytical studies of building materials.

E.B.A.P.: LE 400,000 - 36 months

SP.C.C.: New Communities - Construction and Housing

B.A.: Ministry of Construction and Housing - New cities - building industry in Egypt.

* Was approved by the Specific Council for Construction under the title 7/20 Building materials for zones of new construction and new communities.

Fourth: The field of socio-economic development

9. Sciences of Management and Economics

Total funds in the Five Year Plan:

* For research in economic sciences: LE 154,644
* For research in management sciences: LE 131,000

9/1 Inflation in the Egyptian economy

Goal: To control and bring down inflation because of its destructive social and economic effects;

Elements of Study:

- History of inflation in Egypt from the early 1960's until the present
- Effect of inflation on: income.redistribution, the balance of payment, foreign debt, and subsidy.
- Control of inflation
- Financial and monetary policies
- Implementing economic development without inflation

Period of Project: 12 months

SP.C.C.: Management and Economic sciences (M.E.S.)

B.A.: Ministry of economy and foreign trade - Ministry of Finance - Ministry of planning

9/2 Problems of the balance of payments in Egypt

Goal: To study ways and means to offset the deficit in the balance of payments which has been increasing yearly in the past few years.

Elements of Study:

- To check the reasons behind the problem of the balance of payments and to determine whether these are of temporary or constant effect
- To evaluate factors that affect the foreign currency volume of exports
- To evaluate factors affecting the volume of imports and their payments
- To analyze the history of the balance of payments

P.O.P.: 12 months

SP.C.C.: M.E.S.

B.A.: Ministry of economy and foreign trade - Ministry of finance - Ministry of investment and international cooperation - Ministry of planning

9/3 Foreign debt in Egypt

Goal: The goal of foreign debt has been - and still is - to fulfill social and economic development (regardless of the size of the debt or the large increase in its size). This research aims at presenting suggestions and recommendations to help solve the problem of foreign debt while fulfilling balanced economic development without high inflation rates.

Elements of study:

- History of foreign debt from 1958 until the present time.
- Sources of Egyptian foreign debt
- Agreements for re-scheduling payments due payments
- To present suggestions and recommendations to serve the goal of the research project which is: solving the problem of foreign debt, and fulfilling economic development without having to use additional foreign debts.

P.O.P.: 12 months

SP.C.C.: M.E.S.

B.A.: Ministry of Economy and foreign trade - Ministry of Finance - Ministry of investment and international cooperation - Ministry of planning - Central Bank

9/4 To evaluate the policy of foreign trade

Goal: To formulate a policy for developing foreign trade within the strategic frame of economic development. This will gradually decrease the deficit in the balance of payments and will fulfill both the balance and economic development without causing inflationary burdens.

Elements of Study:

- To review the general history of the Egyptian economy
- To study the role of foreign trade in the Egyptian economy
- To correlate figures of foreign trade with those of the balance of payments:
  * Foreign trade structure
  * Restrictions on both foreign trade and current payments
  * Effect of limitations and restrictions customs on economy
  * Effect of foreign currency surveillance on the economy
- Problems facing the exporting sector in Egypt
- Foreign capital investment and its effect on foreign trade
- Foreign aid presented by advanced countries
- To abolish restrictions on foreign trade and current payment

P.O.P.: 12 months

SP.C.C.: M.E.S.

B.A. Same as 9/2

9/5 Industrial private sector and its role in economic development in light of the industrialization strategy

Goal: To study means, and to maintain the environment which will help the industrial private sector perform its role towards increasing: production, employment, and exports. In other words, fulfilling the targets of economic development in general, and industrial development, in particular.

Elements of Study:

- Historical background - early industrialization
- Relation between private and public sectors under different economic systems.
- The general policy and its effect on economic development
- Industrial production development
- Industrial products
- Small and vocational industries
- Investment in the private industrial sector
- Financing of investment for the private industrial sector
- Problems of private industrial sector
- Presentation of a strategy for the development of private industrial sector

P.O.P.: 12 months

SP.C.C.: M.E.S.

B.A.: Ministry of Industry - Ministry of Economy - Ministry of planning

9/6 Use of energy in Egyptian agriculture

Goal: To identify the ideal use of energy in Egyptian agriculture by using electrical energy and by liberating agricultural animals from labor, i.e., keeping animals only for the production of milk and meat.

Elements of Study:

- Energy as one requirement for agriculture production
- Problems in the use of energy in local agriculture
- The large increase in energy prices for oil and its components and how this is reflected in the cost of other types of energy.
- The stability of the prices of electrical energy in Egypt as a result of local oil production
- The freeing of agricultural animals from labor and the use of energy from oil and its components in agriculture

P.O.P.: 18 months

SP.C.C.: MES

B.A.: Ministry of Agriculture - Ministry of Petroleum

9/7 A survey on levels of land ownership, standard of living, and labor in the Egyptian village.

Goal:

To uncover poverty that results from the disintegration of property into small-sized plots. Since this study is to be performed for the first time, it is recommended that the study be done again after a period of five to ten years to identify the direction in which the standard of living is moving in order to take the necessary social and economic procedures to correct the situation.

Elements of Study:

- Relation between area of property and family consumption
- To study the relation between the individual's property and his share of consumption.
- To study the relation between the property level and size of the family.

- To study the rural family characteristics, such as: number of individuals in family, their ages and employments status.
- To categorize the labor force as to labor and employer, and to categorize typical agricultural voactions, and other socio-economical factors.
- To identify agricultural activities, type of product, cost, price, and the income of farmers from animal wealth and animal production.

P.O.P.: 24 months

SP.C.C.: M. & E.S.

B.A.: Ministry of Agriculture, Ministry of Supply, Ministry of Planning

9/8 To evaluate problems of the public sector

Goal:

To identify problems of the public sector and to suggest methods of treatment.

Elements of Study:

The framework of study includes six stages:

- To identify the problems
- To determine the relationship between the public sector and the nation
- To design the managerial skeleton of that relationship
- To study laws and regulations of the public sector
- To develop both the public sector and its rules
- Results and recommendations

P.O.P.: 12 months

SP.C.C.: M. & E.S.

B.A.: All national agencies and organizations

9/9 The role of the military forces in both vocational and technical training

Goal:

To study the participation of the military forces in the efforts aimed at raising the abilities of Egyptians as a basic element for development. The military force is not only training soldiers in the techniques of fighting, but also is training individuals in production techniques.

Elements of Study:

To survey individuals as to working age, labor opportunities and training opportunities.

P.O.P.: 12 months

SP.C.C.: M. & E.S.

B.A.: All national agencies and organizations

9/10 To survey training efforts in both the public sector and governmental sector in Egypt.

Goal:

To determine available capabilities and resources for training in both the government and the public sector in Egypt through surveying available human and material resources.

Elements of Study:

- To collect available data and information on training centers and to analyze the data to identify their duties and points of strength and weakness.
- To perform field studies
- To hold meetings with responsible personnel in the training centers

P.O.P.: 12 months

SP.C.C.: M.& E.S.

B.A.: Ministries and central management and administration agency

9/11 To study the eprformance of local administrations in governorates in light of the currently contracted research about the evaluation of local governments.

Goal:

To support the system of local governing and to develop the system so that it is capable of functioning according to local conditions and the capacities of the local communities.

Elements of Study:

- To determine the measures used to evaluate both the sufficiency and efficiency of local administrations
- To identify factors affecting performance of local administrations
- To identify the stages of both theoretical and applied research
- To determine the requirements needed to perform the research

P.O.P.: 24 months

SP.C.C.: M. & E.S.

B.A.: Ministry of Local Governments

Projects under consideration

9/12 Management labor in Egypt

9/13 Wages and incentives in Egypt

9/14 Technological development and labor structure in Egypt

10. Social Sciences and Population

10/1 The concept of social justice in both the policies of health and education for the country.

Goal:

To identify the concept of social justice adopted in the educational system in each stage by analyzing laws and regulations applied in different educational stages (including general - technical - special - and university), and laws and regulations applied to health policies to meet the requirements of different classes of people.

To perform a field study to determine the extent of success the national policy has in fulfilling social justice, taking into consideration the social, economic, and political sides which sometimes interfere and limit both the effectiveness and the availability of those services.

Elements of Study:

It has been suggested that a committee be formed which is made up of experts specialized in the above mentioned areas. The committee suggested should include, among others, planners and social policy makers.

The study will be in two stages. The first will be for studying national laws and plans in order to identify the goals desired to achieve social justice.

In the second stage a field study will be carried out on a sample of families that belong to different social classes with the goal of determining the extent of success of the nation's policy in fulfilling social justice. The study will also reveal problems of implementation.

E.B.A.P.: LE 12,000 - 24 months

SP.C.C.: Social sciences and population

10/2 Legal assistance for the poor

Goal

To perform a field study to identify the style of implementing the system of legal assistance to the poor and the extent of efficiency of the system.

Elements of Study:

The research will be done through sampling some ruling by the courts concerning some exemption requests, surveying the opinions of some of the poor to identify the problems they face and their need for legal assistance. This will be followed by meetings with judges and lawyers to check their opinions.

E.B.A.P.:LE10,000 - 24 months, beginning 1984

SP.C.C.: Social science and population

10/3 Legal awareness in the different sections of population

Goal:

To identify the extent to which individuals understand the rulings of the law and their source of understanding, and to study the effect of the communication media in the knowledge.

Also, to identify the extent of legal awareness in different classes of people in different areas of the country (rural and urban), and to identify the sources through which they gained their knowledge.

Elements of Study:

It has been suggested that a committee, made up of experts

from the different branches of law and the fields of sociology, phsychology and communications be formed to perform tests in rural and urban areas to check on the extent of knowledge of individuals and the best method to present legal information to them.

E.B.A.P.: 10,000 - 24 months

SP.C.C.: Society and Population

10/4 A population atlas for Egypt

Goal:

The population atlas represents the first attempt to evaluate population statistics by plotting those statistice on the atlas. This will help experts and research workers to follow-up quickly and easily on any aspect of population. Besides, it will stress the dimension as to where the population is concentrated.

It is possible, through an atlas drawn according to sufficient and accurate statistical data collected over a long period of time, to stress all aspects of population in Egypt and, in turn, provide all the characteristics of population to those experts concerned with that subject in Egypt.

E.B.A.P.: LE 100,000 - 24 months

SP.C.C.: Society and Population

10/5 Sinai Population

Goal:

To study the role of Sinai in absorbing some of the population from the Nile valley to ease the population burden there, and to establish new centers for segments of the population who - after settlement - will be attached to the land and will defend the land when necessary. Finally, to expand in the use of the resources of Sinai which has not

been done because of a shortage in the labor force. These resources include tourism, mining, agriculture, and fishing.

E.B.A.P.: 100,000 - 24 months

SP.C.C.: Society and population and other councils

10/6 The strategy for redistribution of the population in Egypt

Goal: to participate in formulating the strategy for redistribution of population in Egypt as a principle target of the national policy. This will be done by:

. Detailed and accurate surveys for economic resources in different regions of Egypt, especially zones in the desert and along the coast.

. Benefiting from population policies executed in different parts of the world.

Elements of Study:

- To study the following items.

First: The present population distribution in Egypt, as one dimension of the problem.

Second: The strategy for population redistribution in Egypt.

a. To plan to face the problem of emigration from the rural areas to large cities

b. To prepare regional planning for redistribution of population (on the national level) which includes:

- Developing average and small sized cities
- Developing rural regions
- Preparing a regional plan for distributing industry over different parts of the country.

Third: Directing urban expansion to both desert zones and coastal areas.

E.B.A.P.: LE 150,000 - 36 months

SP.C.C.: Society and Population - New Communities - Industry - Construction and Housing - Food and Agriculture

10/7 Types and sources of statistical data

Goal:

To formulate a scientific basis for studies and research in the field of population because accuracy of results is essential to serving the targets of future planning.

Elements of Study:

The statistical data are retrieved from the following sources:

First: Census

Second: National demographic questionnaires

Third: Statistics based on registration of births and deaths

The study includes the following subjects:

- Sources of population statistical data in Egypt and their types, and evaluation of the data.
- Use of statistical methods for correcting census figures
- Extent of benefit from available population statistical data
- Extent of coordination between different agencies whose duties are concerned with population census and demographic studies.

E.B.A.P.: LE 80,000 - 24 months

SP.C.C.: Society and Population

10/8 An evaluation study of all educational and psychological research performed since the 1930's

Goal:

To draw a chart for scientific and psychological research work in Egypt

with the aim of development of further research.

E.B.A.P.: LE 30,000 - 48 months

SP.C.C.: Society and Population

10/9 A study to evaluate education opportunities available for children who were not enrolled in either basic or elementary education.

Goal: To help expand in planning for basic education

E.B.A.P.: LE 10,000 - 24 months

SP.C.C.: Society and Population

10/10 A study of school buildings, their fitness for educational courses, and their capacity to meet expected enrollment demands of students in the different stages of education.

Goal:

To plan a policy for building schools

E.B.A.P.: LE 10,000 - 12 months

SP.C.C.: Society and population

10/11 To study and evaluate some of the experiments in the system of education, such as:

a. The eight year period of schooling

b. Basic education and the effectiveness of its programs

Goal:

To evaluate some of the educational systems to check the possibility of making use of them.

E.B.A.P.: LE 30,000 - 36 months

SP.C.C.: Society and Population

10/12 University and Higher education in relation to development requirements

Goal: To plan for university education and the labor force

E.B.A.P.: LE 25,000 - 36 months

SP.C.C.: Society and Population

10/13 An evaluation study for development of technical education courses in Egypt

Goal:

To evaluate technical education courses, and the preparation of technicians with the aim of improving the process of preparation.

E.B.A.P.: LE 30,000 - 36 months

SP.C.C.: Society and Population

10/14 Evaluation of the one classroom school

Goal:

To evaluate the extent of success of the one classroom school in fulfilling their objectives and to orient them to better performance.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Society and Population

10/15 Obstacles to eliminating illiteracy (from the point of view of the illiterate)

Goal: To help provide fruitful planning of programs and campaigns for eliminating illiteracy.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Society and Population

10/16 Methods of education and training in establishments and production centers

Goal: To plan for the development of the labor force in Egypt

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Society and Population

10/17 Social change and youth - studying some of the problems, such as the effect of imported culture

Goal:

To improve the cultural programs directed to youth with the aim of implementing the social change desired.

E.B.AP.: LE 20,000 - 24 months

SP.C.C.: Society and Population

10/18 Dealing with modern technology

Goal: To present recommendations concerning the introduction (and use) of modern technology into Egypt.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Society and Population

10/19 Social problems of youth (6 - 18 years)

Goal: To furnish the suitable climate for raising young generations according to the philosophy of the society, to protect and treat some of the problems peculiar to that age.

E.B.A.P.: LE 30,000 - 36 months

SP.C.C.: S. & P.

10/20 Values of religious up-bringing in general education and analysis of the contents of religious books and courses.

Goal: to develop methods of religious education in Egypt to fulfill both social and religious aims.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: S. & P.

10/21 Production incentives in both the industrial and agricultural sectors.

Goal: To present recommendations concerning the systems of incentives applied in different organizations.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: S. & P.

10/22 Educational and psychological requirements of new communities

Goal:

Social and educational development of new communities

E.B.A.P.: LE 35,000 - 48 months

SP.C.C.: S. & P.

10/23 The rural, urban, industrial, and desert communities

Goal: To identify the nature of social relations common in each of those communities, to identify the relations between the different systems and the individual (which forms the structure of each society) and to determine factors - both internal and external - that affect them.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: S. & P., New Communities

10/24 New Communities

Goal:

To study demographic characteristics and social relations, social problems and characteristics, and the social needs of different groups of the population together with their role in development of the new communities.

E.B.A.P.: LE 50,000 - 60 months

SP.C.C.: Society and Population - New Communities

10/25 Family

Goal:The family is subjected to some changes in its structure and its functions and this reflects the importance of studying these changes and their results. Also, the study should include the role of the family in modern society and its role in orienting the individual's behavior and the formation of his (or her) character.

E.B.A.P.: LE 50,000 - 60 months

SP.C.C.: S. & P.

10/26 Youth in universities - industry - and agriculture

Goal: Youth represents a social stratum that has its distinguished characteristics in the structure of society. They represent the age group with the most vitality and the highest ability to work. Beside, they represent the age group whose cultural and psychological structure has been almost completed to the point where they can adjust, react, and participate with a great capability to fulfill the aims of society. Therefore, it is important to study both their interests and needs, their values and culture, their political attitudes, and different patterns of either abiding by or deviating from the ideals of society.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: S. & P.

10/27 Women in both rural and urban areas

Goal:

Changes in society have had their effect on women, both in rural and urban areas. The education of women has resulted in having women participate in many jobs. These two facts have had a great effect on family relations and in the economic and social roles of women.

This has raised the need to study the new role of women, their demands and problems.

E.B.A.P.: LE 50,000 - 60 months

SP.C.C.: S. & P.

10/28 Childhood

Goal: Childhood is one of the most important stages in formulating the personality and behavior of the individual within the values and habits of society. Another point is that children represent a great portion of the population as a whole, therefore, it is important to study the needs of children in rural, urban, and industrial societies and the effect of working women as supervisors for children, and also the role of different establishments and social agencies in raising children.

E.B.A.P.:LE50,000 - 60 months

SP.C.C.: S. & P.

10/29 Social insurance

Goal: To meet the basic needs for groups of a particular nature in society. There have been changes and additions made in the social insurance program in order to furnish an umbrella of social insurance which includes pensions for the disabled, and social aid. It is necessary

to evaluate the system of social insurance from its establishment until now, and to project its future needs in quality, quantity and manner of operation. The evaluation will be carried out according to the understanding of modern societies (both eastern and western) of social justice, heavenly religions, and both development and stability requirements.

10/30 Social Map

Goal:

The high density of population on the agricultural lands in the Nile valley has prompted the idea for establishing new communities on the outskirts of existing cities, and to build new cities outside of the densely populated areas. The need is urgent to identify present population densities and the extent of the need for services and social activities, and the relation of that to the population map in both quantity and quality.

E.B.A.P.: LE 50,000 - 60 months

SP.C.C.: S. & P.

10/31 Social policy

Goal: The social policy and its goals are determined through the clear Egyptian ideology which governs the general policy of the country.

The characteristics of the social policy vary according to the changes that take place in society, whether the changes are political, economical or social. Therefore, the social policy is characterised by both flexibility and depth. In light of the social policy, it is possible to formulate specific plans and programs. The stable social policy is one means of easing the burden on social work, its programs and its plans.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: S. & P.

10/32 Social use of technological anc scientific research in Egypt

Goal:

To develop local capacities and administrations to absorb modern technology, to determine the role of technological and scientific research within the framework of general planning for the society, and to show the effect of technology on: the economic management of society and both the educational and cultural sides of the family.

E.B.A.P.: LE 50,000 - 60 months

SP.C.C.: S. & P.

10/33 Technology and social change

Goal:

To study changes that take place in social and cultural life as a result of the many rapid changes of technology in modern society, such as: economic structure of society, structure of the family, recreational and educational facilities.

E.B.A.P.: LE 50,000 - 60 months

SP.C.C.: Society and Population

10/34 Surveying research to identify new conditions, requirements and problems.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: S. & P.

10/35 Research to determine the future shape of the Egyptian society in order to help planners in their efforts.

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: S. & P.

10/36 Research to evaluate efforts exerted to meet the needs of citizens

E.B.A.P.: LE 100,000 - 60 months

SP.C.C.: S. & P.

Projects under study

10/37 Relation between both cultural and economic changes in the values of youth "students"

Goal: The study aims at conducting a survey concerning human values of the Egyptian youth (both sexes) and the relation between these values and some of the basic changes. Also, the relation between the values and some of the behavioral variables which developed as a result of some inherited values in society. This survey will reveal one of the most dangerous social and psychological phenomena, i.e., values.

Elements of Study:

First Stage:

In the first stage, all research work on values in the Egyptian society will be gathered together along with similar research done in other societies. Tests applied and instruments used will also be identified together with the results and courses of action. During this stage a study will be performed to reveal the understanding of values among the youth and the main axes along which these values move. This stage will take four months.

Second Stage:

This stage extends for five months during which all preparations for the study will be done, such as: instruments to be used, design of the questionnaire sheet, the design of the sample to be tested, and the training for field researchers on how to conduct the research.

Third Stage:

During this stage study will be performed, data will be collected, field data will be revised, and statistical analysis will be performed according to a plan devised during the first stage.

This stage will be concluded by presenting the final report. It is expected to last between 10 - 12 months.

E.B.A.P.: LE 15,000

SP.C.C.: S. & P.

11. Basic Sciences

11/1 National project to construct a national network for earthquake detection stations and a main center for earthquake research in Egypt.

Goal: To continuously observe earthquake activities nationally in general, and in some important areas, specifically the high dam lake, Qattara Depression, and the site of the nuclear stations. To identify precisely the earthquake centers, their strength, and their rate of occurance.

To study the possibility of means for early warnings about earthquakes.

To study the effect of earthquake activities on oil production in the Red Sea.

To draw a national seismic map and the distribution of the factors of safey against earthquakes.

Elements of Study:

First Stage:

This includes executing a regional center in Aswan, made up of eight stations to record earthquakes. The stations will be built around the lake and will be operated automatically. The stations will forward information "wirelessly" to the center in Aswan. This stage includes mounting three sets to measure the effect of seismic wave acceleration on the dam proper. Also, it includes instruments and equipment to record the change in the underground water level, the temperature, instruments to measure radon gas coming out of some wells, and wireless receiving sets in the regional center and a unit for analyzing the data.

Second Stage:

This includes constructing seven main stations to record earthquakes along the coast of the Red Sea and at Saint Catherine. These stations will forward information wirelessly to the main center in Helwan.

Third State:

This includes completion of the network of stations along the northern coast, the Nile valley, and in the western desert around the Qattara depression.

E.B.A.P.: LE 10 million

The Academy's share is LE 50,000 - 72 months

SP.C.C.: Basic Sciences

11/2 National program for research on medicinal plants, plants to be used in perfumes and natural products

Goal: To survey, classify, and protect against extinction of both medicinal plants and plants used in making perfumes.

To identify the most suitable areas for growing medicinal plants and methods for increasing their production.

To study the cultivation of medicinal plants, improve them, and introduce new plants while having other plants grow in the region, especially those with high medicinal use.

To study diseases and pests that attack these plants and methods of fighting them.

To create cooperation and coordination between different agencies and organizations that work in the area of medicianl plant research, and to find means of contact between them and similar organizations outside the country.

To publish scientific periodicals and bulletins to advise interested parties on the ideal methods of planting and marketing preparations.

Elements of Study:

- To choose one of the agencies that is currently involved in research for both medicinal plants and plants used for making perfume as a nucleus or a temporary site for the suggested institute. This could be the National Research Center.
- The temporary center will include the following departments:

Pharmaceutical sciences - medicinal plants - medicine and natural products, which already exist in the National Research Center. Later, other departments will be initiated.

- Construction of the building for the institute which will be made up of the following: Medical research departments - laboratories - musuem - library - pharmaceutical (test) factory - and the rest of the laboratory equipment and furniture.
- To appoint a board of directors for the institute from specialized personnel.

E.B.A.P.: LE 1 Million - Academy's participation is LE 250,000 in addition to LE 10,000 for the feasibility study on the National Institute for medicinal and perfume plants.

SP.C.C.: Basic Sciences - Health and Medicine - Food and Agriculture - New Communities

11/3 To build a natural history museum whose budget will be within the budget allocated for the faculty of science at Cairo University.

Goal:

- To collect, classify, and preserve different kinds of living organisms, both animal and plant, and the natural wealth of the region.
- To furnish resources for interested personnel in the field of classification.
- To strengthen scientific connections and to ease exchange of data between national and international experts in the subject.
- To exchange duplicate samples, information and bulletins with similar international museums.
- To organize the process of examining samples and patterns.
- To educate and raise continuous generations of specialized experts in different fields to replace the ever decreasing number of experts.

Elements of Study:

- To survey and to determine all organizations working in the field of classification for different species (plants and animals) and to treat them as the nucleus for future natural history museums, such as at the Faculty of Science - Cairo University, oceanography and fishing institutes, gardens of the Ministry of Agriculture.
- To synchronize all possible nuclei and to support them in order to expand in the process of classification and identification.

- To send all qualified personnel for missions to different countries to complete their training and any of the museums of the world that offer grants to Egypt.
- To contact some world museums to learn about different management methods in order to suggest the system of management to be used for the planned museum.
- To advertize for the project in world scientific organizations to acquire technical and financial data.
- To evaluate the total cost of the suggested museums with all prospective components (design - departments - furnishings)

E.B.A.P.: LE 600,000 - participation of the Academy, one half of it will be foreign currency.

SP.C.C.: Basic sciences

11/4 To support experiments on hybrid beans through crossbreeding foreign and local kinds.

Elements of Study:

- To introduce three types of beans imported from West Gernmany, East Gernmany and Holland for experiments in:

Laboratories: to perform tests on seedlings and other biological tests.

Greenhouses: to check the best time for cultivation, fertilizing and irrigating.

Field: To check the actual behavior in the field and how it fits agricultural processes.

E.B.A.P.: LE 5,000 - 12 months

SP.C.C.: Basic sciences - food and agriculture

11/5 Oceanography data center in Alexandria - Sea Sciences Institute

Goal:

To collect and analyze data concerning the ocean and fishing areas.

To help in studies concerned with measuring the rate of increasing pollution along the Egyptian coast.

To study the processes of erosion and deposition for the Nile Delta and the Egyptian coast which represent national problems for Egypt.

To prepare the first local archives on different ocean data (chemical - geological - physical - hydrobiological - Biology of fishing areas - pollution) with modern methods.

To exchange data with specialized institutes

To improve the efficiency of performance through holding specialized training sessions to prepare cadres of workers with high efficiency.

Research Agency:

Institute of oceanography and fishing areas in Alexandria

Period of Project: June 1976 - 24 months

Budget: LE 20,000

Balance in the budget: LE 10,000

The important results:

The center has collected the results of the hydrographic research and has started analyzing these results with methods followed by advanced institutes of oceanography. A group of programs was entered into the computer in the following areas.

1. The different hydrographic changes, such as
   - The changes in density and water pressure
   - Dynamic depth and position energy
   - The speed of water currents due to differences in density

- The speed of sound under water.

2. To forecast changes in sea bottom levels until 1985

In the area of biological sea sciences:

- A study on rate of growth of fish in both length and weight.
- A study on biometric properties

In the area of chemical sea sciences:

- To analyze the results of chemical changes in sea water and chemical changes in the waters of some lakes, such as the High Dam lake.

E.B.A.P.: LE 30,000 - 24 more months

SP.C.C.: Basic sciences

11/6 To prepare and classify reference texts for marine biology.

Goal:

To prepare and classify reference texts for living organisms in the Mediterranean Sea.

To train an interested generation in that field to meet the shortage of personnel.

Elements of Study:

- To take trips to collect samples along the coast of the Mediterranean using all equipment available, and in addition, to buy samples available in the market.
- To classify the samples and to describe them according to available catalogs and previous experience.
- To photograph and draw the samples.
- To freeze samples unable to be classified for classification in the future.

Research performing agency:

Institute of Marine Biology in Alexandria

Date and Period of Contract: November 1977 - 60 months

Budget: LE 90,000

Balance: LE 16,000

The important results:

Classification included groups of fish, molluscs, crustaceans, gastropods, worms, sponges, plankton and moss.

* Classification was done for 100 types of fish, 92 types of molluscs, 41 types of crustaceans. From the gastropods, 12 families were identified which contain 21 genuses and 27 species. 16 families were indentified for worms which contain 28 genuses and 33 species. Of the sponges, 7 species were identified; 3 of which have economical value and the other 4 do not. Of the animal plankton, 16 families were identified which contain 28 genuses and 58 species. The plant plankton showed 37 genuses and 96 species. Of the sea moss, 9 families were identified, containing 17 genuses and 32 species.

* It was possible to train scientific cadres to become specialized in the field of classification of different sea organisms. The group acquired great technical and practical experience.

* Instruments and equipment were acquired to service the projects.

E.B.A.P.: Academy's participation LE 20,000 + LE 10,000 in foreign currency - 24 more months.

SP.C.C.: Basic sciences

11/7 To support the electronic microscope center in the faculty of medicine at Ein Shams University.

Goal:

To participate in performing the research in different departments of the faculties of medicine and to offer some practical services to other colleges, in addition to NAMRU and the Egyptian authority for producing vaccines and pharmaceutical products.

To perform mutual research work with some foreign universities, such as the University of Dusseldorf and the Pasteur Institute.

Research Agency: Faculty of Medicine Ein Shams University.

Date and Period of Contract: June 1980 / 24 months

Budget: LE 1953 (in foreign currency) was added to the budget on October4, 1980

Balance:

The important results

Include the services presented by the center in the research work done in cooperation between the center and other departments of the College of Medicine, Ein Shams University to study and identify reasons for different diseases, such as: Chronic kidney disease, skin diseases venereal diseases, study of sarcomas in Egyptian rats and mice, the effect of poison from the scorpion in the kidney and muscles, the minute structure of the digestive system when attacked by intestinal bilharzia, the effect of medicine used for epilepsy on the liver, the effect of smoking on the microscopic structure of the lungs, the effect of antibiotics on the sensitive part of the inner ear, and the effect of snake venom on the histology of mice.

In the area of training:

- Some instructors were fully trained to perform research work that was mentioned before.
- The center participated in the annual scientific convention of the faculty of medicine held in March 1980 with five research projects carried

out under the electronic microscope in the areas of kidneys, bladder, and skin diseases.

Services done by the center for other colleges of the University of Ein Shams and other universities and research centers include the following:

Research services for the Faculty of Agriculture

- Ein Shams University, and dissecting department, Faculty of Medicine, Al Azhar University; Faculty of Agriculture, Minya University; Dental School, Alexandria University; Radiation Research Center and Kasr El Aini Center for the Treatment by Radiation; Virology Department at NAMRU; the Egyptian Authority for Pharmaceutical Products and Vaccines; and a common research between the center and the Animal Health Research Center.

Training sessions:

The center held three training sessions for researchers from The Faculty of Medicine, Ein Shams University; other agricultural science and veterinary colleges in different universities; National Research center; Egyptian Authority for pharmaceutical products and Vaccines; and NAMRU.

Common research between the center and foreign universities.

There was common research done between the center and the University of Dosseldorf, West Germany; and one common research project with the Pasteur Institue of Lyons, France.

Foreign visiting professors:

The center hosted many professors from West Germany, France and the United States. Also, the center hosted a French expert to train researchers in the center on the recent methods for preparing the sample and cutting it. and methods of photography and printing.

E.B.A.P.: LE 30,000 - 24 additional months

11/8 Service center for training and geological research in Al Koseir

Goal: To take care of the lack of shelter in the desert for geology students that could function as a service and research center and give the senior class a chance to perform the field training.

To give the graduate students a better opportunity - and a longer one - to carry on their field training and to have their degree requirements include field projects in areas of special interest. Also, this will ease the field work for both the University staff and Ph.D. candidates preparing their theses.

A suitable area in El Koseir - about 10,000 square meters - was assigned to the center where the necessary buildings to accommodate approximately 150 people will be erected. Details concerning reservations for staying there will be issued by the center.

E.B.A.P.: LE 200,000 - including the cost of land and buildings, laboratories, and workshops. The Academy's share is LE 25,000 - 24 months.

SP.C.C.: Basic Sciences

11/9 Study on black silt deposits in the El Koseir area and the Red Sea

Goal:

To study the black silt deposits in Safaga-El Koseir area and to estimate the percentage of hydrocarbons there.

Elements of study:

- A detailed field study of the black silt deposits of the area.
- An analytical laboratory study on the deposit to extract hydrocarbon materials.
- To evaluate the bituminous content as a source of energy.

E.B.A.P.: LE 73,355 + $ 1000 (Academy's share is LE 20,000) - 24 months.

SP.C.C.: Basic Sciences

11/10 Study on both the tectonic formation and history of the Egyptian deserts - first stage between the latitudes 24° - 28° North

Goal:

To prepare a geotectonic map for the eastern desert between the latitudes of 24° - 28° north and to determine the tectonic activities that the areas was subjected to.

Elements of Study:

1. To identify the geological formations of the different rocks all the way to the modern age.
2. To study the rock units for the following points:
   - Age
   - Stages and tectonic activity
   - Sedimentation and igneous activity
3. To analyze the geological formations in full detail, such as:
   - zones that contain the groups of tubs
   - Areas with faults occupied by middle aged rocks, such as Mallah, Gabal Dawy, and Gabal El Zeet
4. To divide the area into tectonic units and to prepare tectonic maps

E.B.A.P.: LE 24,000 - 36 months

SP.C.C.: Basic Sciences

11/11 To continue the modern evaluation of the middle part of the Eastern Desert.

Goal: To prepare detailed maps for some of the areas between Wadi* Ambagi - Wadi Zoreeb - Sodeen Zone - Wadi El Hamrawee - Wadi Elasal - and Wadi Om Ghobg

To collect the necessary samples in order to draw detailed maps of those areas.

* Wadi is valley.

Research Agency: Faculty of Science - Tanta University

Date and Period of Contract: 19 July 1978 - 24 months

Budget: LE 15,000

The important results:

1. Planning and detailed geological surveying was completed for the following zones:

- Wadi Ambagi whose area is 250 square kilometers
- Wadi Hamraween whose area is 250 square kilometers
- Wadi Sodean whose area is 250 square kilometers
- Work now is currently underway for Wadi Mobarak whose area is 2000 square kilomaters

2. Maps are being drawn now for those areas as the first step toward drawing one map for the eastern part of the country.

E.B.A.P.: LE 5000 - 12 more months

SP.C.C.: Basic Sciences

11/12 Feasibility study for the mathematics and applied mathematics institute

Goal:

To group the following departments: Research Mathematics, numerical analysis, mathematical models, simulation, operations research, and departments of applied math in industry and other activities which serve the national economy, industry, agriculture, health and education, in order to form a distinguished institute whose employees would only work there and have sufficient financial compensation and facilities furnished. Their work should be evaluated periodically.

Egyptian experts and foreign experts will exchange work in the institute to develop both management of the institute and scientific research systems .

E.B.A.P.: LE 20,000 (to perofrm the feasibility study) - 24 months

S.P.C.C.: Basic Sciences

11/13 To study the establishment of an institute for laser research and infra-red beams and their application

Goal:

To gather all research workers in the laser field who are scattered in many places. This will permit the identification of how to build and operate laser equipment with different capacities and how to improve efficiency and avoid harm. Also, to study different uses of different laser beams in some applied areas, such as the study of metal surfaces; determining the exact length of long distances; level of air pollution; and reaction of laser beams with living cells.

Elements of study:

To increase the current available resources in the research on laser beams and infra-red beams in order to determine the best applications, and the requirements for cadres(technical and scientific) and technical instruments.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Basic Sciences

11/14 Supporting the High atomic energy physics research laboratory.

Goal:

To support the research laboratory in the field of high atomic energy physics and to increase its capacity for research while completing its equipping in order to enhance the opportunities of Egyptian researchers

in that field.

Elements of Study:

To formulate a plan for operation for the present center, and how to develop it and equip it with things necessary for research, in cooperationg with some professors from other atomic energy laboratories throughout the world.

E.B.A.P.: LE 20,000 - 24 months

SP.C.C.: Basic Sciences

11/15 To complete the pilot study for the construction of the institute of research on the physics of "solids".

Goal:

To design an integrated project for the suggested institute with the determination of goals, their priorities, the preliminary budget for the cost of construction and requirements in both personnel and equipment in the different stages. To make the best use of available resources.

Elements of Study: These include two stages.
The first stage has been implemented. This was to perform a field study inside Egypt to determine the number of research workers in this field and their scientific activities; to survey the laboratory facilities current available in different universities and research centers, and to identify the problems encountered in the industry.

The second stage requires the following:

To perform a field sutdy abroad visiting a number of centers and institutes concerned with research in the physics of solids.

1. To study different research methods, and the development and planning of the applied physics of solids in order to determine priorities for serving the national economy and solving its problems.

2. To evaluate and study means and methods of managing those labs and methods of communicating with different industries.

A visit was conducted to the Institute of Industrial Research at the University of Iowa, USA.

Research Agency: Faculty of Science, Cairo University

Date and Period of Contract: May 1979 - 24 months

Budget: LE 4,500 local, LE 3,000 foreign

E.B.A.P.: LE 20,000 - 24 additional months

SP.C.C.: Basic Sciences

11/16 To study the exact determination of the time for prayers and the start of Arabic "lunar" months.

Goal: To study the light in the sky in different regions of Egypt before sunrise and after sunset. This will ehlp to calculate the time period for morning prayers (between the first light and sunrise), and to calculate the time between sunset and the disappearance of the red horizon light which determines the time for evening prayers.

Elements of Study:

To take the required readings on the instruments used (including photometric astronomical readings) in Abu Simbul - Aswan - Mersa Matrouh - Fayoom - Hurgada - Qattani desert - Suez - Saint Catherine - and to obtain the necessary equipment for the canter of geophysical and astronomical measurements.

E.B.A.P.: LE 50,000 - The Academy participates with LE 20,000) It is expected that the balance will be provided by the Islamic research Complex- 24 months

SP.C.C.: Basic Sciences

11/17 Clinical Chemistry Unit

Goal:

To graduate cadres of researchers in the field of medical analysis.

To perform advanced research in the field of clinical chemistry.

To train graduate students - and others - in this field.

To hold training sessions (local - regional - and international) in the delicate clincial analyses in order to raise the standard of specialized personnel and prepare them for obtaining their M. Sc. and Ph. D. degrees in clinical chemistry.

E.B.A.P.: LE 50,000 - one half of it in foreign currency) - 60 months

SP.C.C.: Basic Sciences

11/18 A photosensitive study of some kinds of pesticides derived from different phosphoric organic compounds.

Goal:

To perform studies under local environmental conditions concerning the photosensitive behavior of some phosphorous, organic (and pyrothiroide) compounds which are used as pesticides. This will determine the best timing for the use of these compounds.

Elements of Study:

To evaluate the photosensitive behavior of these compounds under different environmental conditions.

To evaluate the effect of change of environmental conditions on the efficiency of the pesticides.

To study the effect of sunlight on:

- Time of spraying pesticides
- Natural condition of the pesticides
- Humidity
- Hydrogen number

To study the mechanism of the reaction and to identify the results.

To identify the best conditions for use of pesiticides under local environmental conditions, especially sunlight.

E.B.A.P.: LE 30,000 - 24 months

SP.C.C.: Basic Sciences - Environment - Food and Agriculture.

11/19 The use of stabilized solution of gelatin

Goal: To use gelatin solutions as alternatives to blood plasma. Gelatin was chosen because it is easy to furnish in large quantities; is easy to keep sterilized for long periods of time; and does not cuase the formation of antibodies inside the human body.

Research agency : Medical Research Institute - Alexandria,

Date & P.O.P.: June 16, 1980 - 60 months

Budget: LE 278* local - LE 21,000 foreign

Balance: LE 493* foreign

Important Results

The study indicated that in experimental animals, the gelatin solutions increase the excretion of water and sodium, calcium, and magnesium ions in the urine.

These changes are desirable in the case of burn treatment and also in the case of a shortage of proteins in the blood. Egyptian General Authority for Biological Products and vaccines has produced more then 30,000 units, which have been used successfully in different hospitals with no side effects.

E.B.A.P.: LE 35,000 (of which LE 30,000 is foreign currency) - 12 additonal months

SP.C.C.: Basic Sciences - Health & Medicine

* As written

Other Projects

11/20 Biotechnological and gene crossing research

E.B.A.P.: Academy's participation LE 20,000 - 24 months

11/21 Feasibility study for the construction of the bio-physics research Institute

Goal: To group personnel working in the area of biophysics in one central institute and to furnish that institute with the required technical equipment and textbooks.

E.B.A.P.: LE 20,000 - for the feasibility study

SP.C.C.: 24 months

11/22 Production of food and fodder from minute living organisms

Goal: To produce fodder and some food materials from minute living organisms.

E.B.A.P.: Academy's share LE 30,000 - 24 months

SP.C.C.: Basic Sciences - Food and Agriculture - Industry

11/23 To support and to encourage projects with first priority of serving national development

Goal: To support national projects (in areas connected with development) which research workers perform in universities and research centers.

E.B.A.P.: LE 250,000 - 60 months

Second: Continuous Projects

1. Specific Council for Food and Agriculture

1/1 National campaign to improve the production of maize

Goal: To apply the available and confirmed results of scientific research concerning this product to increasing production per feddan from 1.6 tons to 2.2 tons.

Research agencies: Universities - agricultural research center

Date and Period of Project: 36 months - annual contracting for the areas to be covered by the campaign, beginning 1980.

Budget: LE 569,000

Balance Available: LE 37,843

The important results:

Results of the campaign (1980-1981) were evaluated while those of 1982 are still under evaluation. Results show that the average production in all areas was 26.4 ardab per feddan; total increase in production is 10,639 ardab or a 120 percent increase; the increase in return is LE 1,276,344, and the benefit cost ratio is 5.7 to 1.

Benefiting agencies: farmers.

1/2 Introduction of short season cotton with high yield.

Goal:

To introduce the best kinds of known short seasoned cotton having a high yield with the aim of cultivating a winter crop preceding the cotton in the same year, and to produce the same annual cotton needs from a smaller area.

Elements of Study:

To introduce some imported types of cotton from the USA having high yield and whose season is two months shorter than Egyptian types.

Research Agencies: Universities, agricultural research center, National Research Center

Date/Period of Project: 36 months with annual contracting of the areas for the experiment

Budget: LE 257,000

The Important Results

The production per feddan for most kinds of cotton averaged between 10 and 17 kintar. The production efficiency was 10 kg/day/feddan during the season (120-150 days), compared to 3 kg/day/feddan during the season (180 days) for Egyptian cotton planted at the regular time; and compared to 5 kg/day/feddan as a national average for all cotton areas of Egypt (210-240 days).

1/3 National campaign to improve rice production

Goal:

To increase the yield of rice from the same areas that are cultivated now by developing different agricultural means, such as: planting short seasoned seeds twice within the same season, or planting them once after early summer crops, such as soybeans and sunflowers. This will result in increased production to meet local increasing demand and export.

Elements of Study:

To compare short seasoned rice with local types of rice that are planted in the regular time of the year.

Research Agencies: Universities - Ministry of Agriculture

Date & P.O.P.: 24 months, with annual contracting of areas decided upon in the campaign

Budget: LE 95,690

Balance: LE 7,000

Important Results:

Results indicated the feasibility of cultivating short-seasoned rice twice a seaons after winter crops, and the feasibility of cultivating it once after soybeans. Both results showed higher yields than the regular rice crop (giza 172).

B.A.: Farmers

1/4 Environmental studies on the cotton leaf worm

Goal:

To use biological attractions of the cotton leaf worm to decrease its population in cotton fields. Applied studies are being carried out in 1000 feddan in Fayoom.

To fight the worm with microbic diseases (bacterial and viral)

Elements of Study:

To evaluate the effectiveness of the law preventing irrigation of clover after May 10 each year, as a first line of defense against the worm.

- To determine the critical level of attack by the worm during the month of June.
- To use biological attractions to decrease the population of the worm in the field.
- To use microbes to fight the worm in the field.

Research Agencies: Faculty of Agriculture - Ein Shams University

Date and Period of Project: August 1974 - 96 months

(36 + 36 + 24)

Budget: LE 173,500 and LE 200,000 foreign currency

Balance: LE 36,069 and LE 7,590 foriegn currency

The important results

Results of the study lead to implementing the previous ideas:

1/5 To improve the fodder content of Egyptian clover.

Goal: To increase production and quality of Egyptian clover

Elements of Study:

- To study differences in clover seeds
- To study the effect of mixing short season clover and permanent clover with fodder weeds
- To study the effect of chemical and biological control on the extent of damage by the cotton leaf worm on clover.

Research Agency: Faculty of Agriculture - Cairo University

D. & P.O.P.: October 1979 - 60 months

Budget: LE 92,750 local currency; LE 6,700 foreign currency

Balance: LE 39,634 local currency; LE 3,390 foreign currency

Important results:

- To select the seeds on the basis of their production of strong roots and strong green parts which effectively resist pests and disease.
- To enhance the process of fertilization by having a honeybee hive in a selected, isolated part of the greenhouse.

1/6 To survey the biological enemies (parasites and predators) of the American boll weavil worm and the extent of fighting the worm biologically.

Goal:

To design an integrated program to fight the American boll weavil in which biological and microbic resistance is used.

Elements of study:

- To study the fluctuation in the population number of worms and to check the relation between that number and the number of biological enemies, both parasites and predators. Weather conditions should also be recorded.
- To determine causes of different diseases that attach the worm in Egypt, and to artificially raise predators and parasites, and different disease causing species, and to perform laboratory tests using microbes to fight the worm.

Research Agency:	Agricultural Research Center
Date & P.O.P.:	October 1979 - 36 months
Budget:	LE 32,900
Balance:	LE 18,764

Important Results:

- Identification of all different parasites and predators of the American boll weavil in different areas and different seasons.
- Evaluation of the economic benefit of those biological enemies.
- The change in the population of the biological enemies in the field with the effect that pesticides have on them.

1/7 Egyptian land productivity map for different products

Goal:

To estimate productivity of important crops raised under different soil conditions and different environmental conditions while keeping agricultural coefficients the same. This should determine the relation between soil properties and productivity for different products in different parts of the country. A map will be drawn to that effect.

Elements of Study:

- The soil classification maps will be taken as a basis for the study.
- To identify five latitudinal lines, each one representing different parts of the country. Each will be one kilometer wide.
- Soil classification will be performed along each line, and a follow-up on the productivity will be done for different types of crops.
- Results will be implemented accordingly in different parts of the country to produce maps of the soil productivity. These maps will present guidelines for planning the crop rotation cycle and crop patterns.

Research agency: Water and land research institute - Agro-economic institute

Date & P.O.P.: June 1981 - 36 months

Budget: LE 290,900

Balance: LE 240,292

Important results:

- A determination of the following items was made: Classification of different cultivated areas, salinity, underground water level, soil type and productivity, and the most suitable areas for the experiment.
- The areas representing all types of soil and products were chosen (about 200 feddan).

- Two more lines were added for the mid-Delta region. The line total became seven.

1/8 The re-use of drainage water for irrigation

Goal: To determine both the quantity and quality of drainage water during the year. This will show the extent of its suitability for different soils and different crops in the Delta and Fayoom. Calculations for water requirements, water balance, and salt balance will be done for the Delta and Fayoom.

To analyze the water in branch drains during the year to identify the relation between the waters and water in the main drains, and to identify the common crop patterns in different areas.

To relate between the quality of water and existing plants

Elements of Study:

- A complete study of the data taken for all main and branch drains
- To record all data on the discharge and the analyses of water and to determine the available discharges of the drains (and the non-available also).
- To analyse the data in regard to quality and quantity - during the year - and in different years and to evaluate the suitability of planting in different soil conditions.
- To choose zones, such as (eastern Delta - Mid-Delta - Western Delta - Fayoom - Sinai) and to locate some areas within these zones that had old drainage networks, others which will have drainage networks within two years, and others which will have drainage networks after five years, in order to evaluate the effect of both underground drainage system and crop cycle on the quality and quantity of drainage water.

Research Agency: Drainage research institute, Land and Water institute, Desert Institute.

Date and P.O.P.: December 1981 - 18 months

Budget: LE 119,000

Balance: LE 89,250

Important results:

- Available data concerning quality and quantity of drainage water in Upper Egypt, the Delta and Fayoom was collected.
- The data collected was then analyzed to estimate the suitability of different crops and different soils; the data was prepared in a fashion that was able to be fed into a computer.
- A mathematical model was designed to forecast quantity and quality of drainage water.
- A statistical analysis was applied to choose the ideal spots from which to take samples.
- A mathematical model was designed to indicate errors in laboratory analyses.
- Some points were identified as measuring points for drainage stations and drains. An integrated plan was devised to measure water discharge and quality.
- Zones were chosen as representative to the Delta, Sinai, and Fayoom regions.

B.A.: Ministry of Irrigation, Ministry of Agriculture, Ministry of Land Reclamation.

1/9 To identify rare elements and clay minerals.

Goal: To perform studies necessary to identify the extent of the presence of rare elements in the soil in order to substitute those elements which promote production. Also, to identify the clay minerals in the soil which play an important role in determining both chemical and physical properties of the soil.

Elements of Study:

- To collect data and to locate the points of sampling on land maps. Aerial photographs will be used to help locate those points, while samples for clay minerals will be retrieved at ground water table. The samples will then be analyzed by the following methods: x-ray - electronic microscope - infra-red beams - heat differential analysis.
- To estimate the total quantities of rare materials and amounts that can be extracted by different methods.
- To perform seedling experiments to identify the ideal content of those materials suitable for different crops.

Research Agency: Universities - National Research Center - Agricultural Research Center

Date and P.O.P.: October 1978 - job began in January 1979 - 72 months

Budget: LE 118,400

Balance: LE 71,456

Important Results:

- The studies performed on clay minerals and rare èlements were collected and grouped.
- Methods of sampling and analyzing the samples were standardized.
- Samples representing area units of zones were located on maps.
- Total quantities of rare elements and available amounts of those quantities were estimated by DTAP.
- The types of clay minerals available were identified.

1/10 Study of improving sandy soils and the economics of their reclamation.

Goal: To direct attention to reclaiming large areas in order to serve the increasing number in population, and to have those reclaimed

reach their productivity level as soon as possible.

Elements of Study:

- To use some building materials (bitumin - polyacrlamide - polyvinyl - sulfates - latex).
- To use some types of organic materials (Sesban and manure)

Research Agency or agencies: Universities - National Research Center - Petroleum Authority.

Date and P.O.P.: April 10, 1979 - 48 months

Budget: LE 53,195

Balance: LE 37,833

Important results:

- All research work done on both local and international levels was collected.
- Laboratory experiments were performed to test factors required for successfully using the building materials.
- Some field experiments for materials that had been proven effective in the lab, were performed.

B.A.: Ministry of Land Reclamation - Ministry of Agriculture

1/11 To study sardine and other fish traps along the Egyptian coast on the Mediterranean Sea between Rosetta and El Salloom

- To exploit the existing fishing areas for sardine and other fish types in that zone.
- To evaluate the fishing capacity (of those types) in the zone.
- To study the marine environment predominant in that zone.

Elements of Study:

- To study the fishing traps in the Gulf of Saloom extending to Sidi Berrani

- To study coastal fishing areas from Abu Keir Bay (and Alexandria West) to Mersa Matrooh.

D. & P.O.P.: August 5, 1974 - 6 years

Budget: LE 672,600 (of which LE 450,000 for the boat has not yet been allocated).

Research A or A's: Institute of Marine Sciences and Fishing Traps.

Important Results:

It was possible to study the environmental conditions of the Egyptian Mediterranean coast in many areas between Rosetta and El Salloom. This study included the following:

- Physical, chemical, and geological studies
- Biological studies on the fishing areas
- Hydro-biological studies
- The project identified the hydrobiological properties of the water between Rosetta and Mersa Matrooh, all year round. This included temperatures, salinity, and surficial currents. The study also included the chemical compounds and salts in the area, such as: dissolved oxygen, phosphates, silicates, and nitrates.
- The project identified the nature of bottom sedimentation in the Arab gulf between Sid Abdul Rahman and Mersa Matrooh.
- The project also identified the following through hydrobiological studies:

1. The distribution of fetoplankton and zuplankton during the four seasons of the year in Rosetta, Abu Keer, Al Mex, El Hamam, El Alamein, El Dabaa, Foka, and Mersa Metrooh

2. The identification of bottom living organisms between Mersa Matrooh and Rosetta.

- A final report on all findings will be prepared during 1983.

1/12 A study on non airborne diseases which attack sheep and the development of vaccines against them.

Goal:

To develop production of vaccines for sheep against non airborne diseases which cause a 30 percent death rate in sheep herds attacked.

Elements of Study:

- To study the epedemic nature of non airborne diseases on the national level.
- To study factors that increase the chances of attacks on animals.
- To improve available vaccines
- To evaluate immunity passed to newborn animals if the mother had been vaccinated.

Research Agency: Animal Health Research Institute

Date & P.O.P.: August 22, 1979 - 60 months

Budget: LE 63,5000

Balance: LE 22,600

Important Results

- 482 samples of animal stools and the flooring of sheep pens were tested.
- Studies on improving vaccines were performed.
- 39 samples from the remains of dead sheep and cows were tested.
- Some vaccine samples were produced and tested.

B.A.: Ministry of Agriculture - Animal Production Stations - Interested agencies - Sheep owners.

1/13 Project of the ideal village in animal production

Goal:

To examine the health conditions of farm animals with the aim of raising their productivity.

Elements of Study:

- To perform campaigns of information for farmers in villages
- To survey all animals in the villages (cows-buffaloes)
- To perform clinical check-ups and laboratory tests to determine the presence of parasitic diseases.
- To study the reproductive system.
- To collect semen from the best studs genetically.

Research Agency or Agencies: Veterinary College - Zagazig University

Date and P.O.P.: July 1976 - 60 months

Budget: LE 71,500

Balance: LE 5,875

Important Results:

- Use of different methods in treating infertility
- Fighting all types of parasites
- Inoculating poultry against epedemic diseases
- Checking for T.B. and contagious miscarriage in cows and buffaloes
- Artificial insemination to improve genes

B.A.: Ministry of Agriculture - concerned agencies - cattle owners.

1/14 Study on the economics, feeding systems, and different sytems of care for sheep production.

Goal:

- To improve the fertility rate of sheep.
- To improve the rate of growh in the lamb.

- To study the economics of intensifying reproduction systems.

Elements of Study:

- To evaluate the effect that feeding has on the age and weight at maturity and on fertility.
- To increase annual production of lambs and to evaluate suitable food coefficients.

Research A or A's: Faculty of Agriculture, Al Azhar University

Date and P.O.P.: Nov 30, 1982 - 48 months

Budget: LE 478,850

Balance: LE 94,009

Important Results

- Increase fertility and increase the rate of births
- Increase the weight of newborn lambs
- Decrease the death rate.
- The experiment in the early weaning of baby lambs. Six weeks after birth has been found to be the best age for weaning.

B.A.: Ministry of Agriculture - Concerned agencies - sheep owners.

1/15 Studies on reasons for the low productivity and infertility of the Egyptian buffalo.

Goal: To raise the fertility efficiency of buffaloes through determining reasons for their low fertility.

Elements of Study:

- To study reasons behind the late first pregnancy in buffaloes.
- To study reasons behind long periods between pregnancies exist.
- To study factors affecting the semen of buffalo bulls and the feasibility of freezing it.

Research Agency: Faculty of Agriculture - Cairo University

Date and P.O.P.: August 13, 1974 - 84 months

Budget: LE 110,550

Balance: LE 40,817

Important Results:

An expansive study was prepared on the reproductive activities of buffaloes (including all cycles) and the changes in the female buffalo's hormones in changing local environmental conditions.

B.A.: Agricultural directorates - veterinary directorates - other concerned agencies - cattle owners.

1/16 To study the economics of meat production in Egypt (importing meat is to be considered)

Goal:

To study the economics of meat production in both the public and private sectors.

- To compare the options of importing meat and producing it locally.
- To study the relation between meat production and its cost.
- To evaluate both production and consumption levels (present and in the future)

Elements of Study:

* Local Studies
  - To study the meat supply for individuals and establishments
  - To evaluate the economic efficiency of production units
  - To study the principle determinants of meat supply in the private sector.
  - To determine the feasibility of both horizontal and vertical expansion in animal production.

- To evaluate the import policy of meat and fodder
- To estimate present and to project future meat consumption
- To compare importing meat and to determine the ideal places for importing - with producing the meat locally to evaluate the effect of the decision taken on: consumption, price levels, trade balance, and the investment directed toward animal production.

* Studies to be performed abroad
  - To visit some meat producing and exporting nations
  - To prepare an economic report on the preference for importing meat in different forms.

Research Agency: Faculty of Agriculture - Ein Shams University

Date and P.O.P.: Nov 30, 1974 - 48 months

Budget: LE 24,000

BalanceL LE 13,000

Important Results:

- The design of the questionnaire sheet concerning the private sector producer and his problems
- Data concerning meat consumption was collected and is now being analyzed.
- Data concerning the importation of meat was collected.
- Data was entered into the computer for economic analysis
- Preliminary results were obtained

B.A.: Ministry of Agriculture - concerned agencies - cattle owners

1/17 Application of the BCG vaccine

Goal:

To apply the results of research work done on the disease of false T.B. which attacks sheep. The disease represents a univeral problem for both sheep and goats.

Elements of Study:

- To vaccinate sheep
- To perform field follow-up on the results of vaccination
- To perform scientific tests to check the ability of the vaccine to prevent the disease
- To hold scientific symposiums and to train veterinarians and personnel concerned with animal welfare.

Research A or A's: Animal health institute - Ministry of Agriculture

Date and P.O.P.: June 1981 - 36 months

Budget: LE 109,900

Balance: LE 60,381

Important Results:

- 159,671 sheep and goats were inoculated in the governorates of Beni Suef and Fayoom.
- Preliminary results from the use of the BCG vaccine and the Korini vaccine showed considerable effectiveness in protecting sheep against pox. The Korini vaccine in particular showed greater positive results than the BCG against pox and the initiation of immunity.
- Rate of growh of bulls increased.
- Rate of miscarriage in cows vaccinated with BCG (and attacked by Rift Valley Disease) decreased.

B.A.: Ministry of Agriculture - Concerned agencies - Sheep owners.

1/18 Preparing the artificial food mixtures for fish.

Goal: To find balanced food mixtures made from unconventional materials with high nurishment coefficient, and which are cheap, in addition to the known materials presently used, such as bran and cotton cakes. This will help ease the fodder competition between fish and meat producing animals.

- To improve the quality and volume of fish food and to expand in the kinds of fish that could use artifical food.
- To increase the productivity of a feddan of water by both artificial food and fertilizers.

Elements of Study:

First Stage:

- A complete survey of the wastes from sewers, agriculture, and industry while performing some experiments to extract from those wastes suitable materials for food and further, performing biological tests to check their compound and whether they are suitable for food for fish.
- To prepare the experimental tanks necessary for field tests in both Serw and El Kanter El Kahiria experimental stations (which come under the Marine Science Institute).
- To continue buying the necessary equipment and instruments required by the lab for preparing fish food.
- To prepare preliminary food mixtures and to test their suitability for use as food for fish.

Second Stage:

- To continue with studies for developing the best food mixtures with the highest protein values and which yield the highest growth rate.
- To perform field tests about organic and chemical fertilizers and to check their effect on fish growth.

Third Stage:

- To continue with studies about food mixtures and to evaluate the best from an economic point of view.
- To perform field experiments using suitable food mixtures and organic and chemical fertilizers in the experimental tanks.

Fourth (final) Stage:

- To continue with the field experiments on larger areas of water and to record the results.
- To expand in suing the water channels and water areas as fish farms This will be done by planting the fish in basins, farms, and net enclosed areas, in which artificial food mixtures will be used.

All stages need chemical analyses and studies concerning the fish rate of growth, rates of food transformation, and rates of total fish production. Also, the studies will include water environmental studies and economic evaluations.

R.A.: Marine Science Institute - Suez University

Date and P.O.P.: August 31, 1982 - 36 months

Budget: LE 180,000

1/19 Project for breeding salt water fish

Goal: Hatching the Dennise fish artificially

Breeding the Dennise larvae artifically

Breeding the Dennise finger-sized fish in fish farms and ponds until reaching the marketing size

To perform the same stpes on other salt water fish, such as Sole and Mullet.

To use both natural and artificial fertilizers and artificial food to increase fish production of the above mentioned types.

To survey the coastal areas along the Mediterranean to check new areas for collecting the Mullet crop, and to extablish the volume of the crop with the seasons of big volume and the amount of that volume which can be collected and transferred to the farms.

Elements of Study:

First Stage:

- To prepare the Mex fish farm.
- To complete a survey of the zones of grouping of the mullet crop and the Dennise crop along the coast of the Mediterranean Sea and the Suez Canal.
- To raise the Dennise fish until the fish reach the hatching stage.

Second Stage:

- Attempting to hatch the Dennise artificially.
- To grow the Dennise larvae until they reach the finger size
- To continue surveying the coast of crop grouping and to check quantities that can be collected and transported.
- To grow sole until they reach the hatching stage.
- To continue the construction and furnishing of laboratories.

Third Stage:

- To attempt hatching sole.
- To grow sole larvae until they reach the finger size.
- To continue with the surveying of the crop groupings.
- To raise mullet until they reach the hatching stage.
- To complete the furnishing of laboratories.

Fourth Stage:

- To improve methods of collecting and transporting the marine fish larvae.
- To grow sole fish to finger size in the fish farms.
- To grow Dennise fish to finger size in the fish farms
- To continue with storage and growth of the Mullet family of fish for hatching.
- To complete construction

Final Stage:

- To attempt hatching the mullet family of fish
- To increase the resistance of the mullet family until it reaches the finger size stage.
- To study the development of the mullet fish in different stages and their diet needs during the different stages.

R.A.: Marine Sciences Institute

D. & P.O.P.: April 24, 1982 - 60 months

Budget: LE 160,000

Balance: LE 125,000

2. Specific Council for Industrial Research

2/1 To study the nurishment value of the waste products from food plants (for fruits and vegetables) for use as fodder for agricultural animals and poultry.

Goal:

To use the waste products from food factories to make of a good percentage of fodder used in Egypt.

Elements of Study:

- To survey all agro-industrial companies and their waste products.
- To evaluate the nurishment value of the waste products.
- To determine the extent these wastes can be used for feeding animals and poultry.
- To find the best method for using waste products.

Research Agency: Facultry of Agriculture, Alexandria University

Date and P.O.P.: June 1975 - 60 months

Budget: LE 95,230

Important Results:

1. To use 1.5 % urea in fattening experiments. This recommendation was adopted by the fodder committee in the Ministry of Agriculture. There are some trials bing done to modify factories so that they can use urea.

2. To introduce factory waste products for use as fodder for animals, both meat and milk producing. Experiments are being performed - on the industrial level - to use the wastes as an constituent of animal food.

3. Use of rice husks as fodder for cattle fattening (about 10 % of the production). A factory for husk processing is under construction.

4. The use of solid wastes in the shape of silage as animal food. It prooved successful. Economically, it represents the best way since it does not require industrial processing.

5. Experiments on the chemical treatment and vapor treatment are underway through a research project financed by Canadian Aid (60,000 Canadian dollars) - to buy the necessary equipment

B.A.: Fodder factories in Egypt

2/2 Production of silicon carbide from rice husks

Goal:

To use a cheap agricultural waste product (rice husks) in producing the highly expensive silicon carbide which is used for melting and polishing metals and heating poles. Also, silicon carbide has distinguished properties as a semi-conductor.

Elements of Study:

To produce silicon carbide from rice husks at a relatively low temperature (1500°C).

Research Agency: National Research Center

Date & P.O.P.: December 1979 - 24 months

Budget: LE 8,000 local currency

LE 12,000 foreign currency

Balance: LE 750 local, 12,000 foreign

Important results:

- Conditions of producing silicon carbide by distillation of rice husks under different conditions, while using a catalyst and in a surrounding atmosphere of argon and nitrogen have been determined.
- Studies on production of silicon nitrate

Even though this was not included in the contract, it was decided to study the production of silicon nitrate from rice husks since it forms at a lower temperature than that of silicon carbide. Besides, its chemical and physical properties are equal to those of silicon carbide, while its coefficient of expansion is almost half that of silicon carbide which makes its resistance to heat higher than the carbide's.

B.A.: Egyptian company for delicate mechanical industries (SABI)

2/3 Production of Feta Cheese having standardized properties.

Goal: To study the conditions of producing feta cheese in Egypt and to adjust these conditions with the aim of arriving at one (or more) methods of manufacturing the cheese with standard properties which suit the Egyptian taste.

Elements of Study:

- To study a solution for the problem of the milk shortage and its high price which is then reflected in the price of cheese. This can be done by mixing buffalo milk with other types of milk, including dry powedered milk, to increase cheese production by about 50%. Experiments

will be performed to modify the manufacturing process, and to formulate the specifications of the fresh product and the stored product.

- To produce Feta cheese in a scientific, standardized way by choosing the most suitable biochemical coefficients in the cheese industry, and the effect of the coefficients on taste.
- To increase the process of manufacturing the cheese through the control of biochemical reactions.
- To produce local rennin suitable for manufacture of Feta Cheese and to study their effect on the product for all types: cows, buffaloes, sheep, and goats.
- To develop the industry of preserved Feta cheese by using powdered milk. The manufacturing process will be modified from the time of receiving the milk until packaging, and checking the feasibility of using a new packaging method instead of the tin can presently used.

Research Agencies: Faculties of Agriculture in Al Azhar, Cairo and Alexandria Universities.- National Research Center.

Date of P.O.P.: December 1979 - 36 months

Budget: LE 73,913 local, LE 32,285 foreign

Balance: LE 14,803 local, LE 3,974 foreign

Important Results:

- Cheese resulting from supplementing full fat milk with skimmed milk (on the semi-industrial level) was similar to cheese resulting from lab experiments. That is, the best kind of cheese results from mixing skimmed milk with cow's milk and then mixing the mixture with buffalo milk.

- The rennins of baby animals are better than those from old animals since the curdle resulting from milk with the salt percentage of 10% is not good when using cow's milk or mixed milk.
- There is a great similarity in cheeses resulting from using skimmed milk that is recycled and skim milk which came from fine filtration.
- Cheese produced from buffalo milk and applying the fine filtration method tastes better than cheese manufactured by the conventional methods.
- It was possible to extract rennins from stomachs of large animals, small animals, sheep and goats.
- The rennins prepared from stomach's of weaning baby animals resisted salinity more than that from big animals.
- The change in the curdling process is proportionate to the ration of mixture of the rennins from baby animals to big animals.

B.A. or A's: Misr Food and Dairy Company - Factories of Feta Cheese in the private sector.

2/4 Studying the damage caused by corrision of metals and alloys used in different industrial functions.

Goal: To estimate damage resulting from corrision of metals. To form a committee of experts and scientists in that field whose advice will be needed in the design stages of factories to avoid that problem.

Elements of Study:

- To evaluate losses due to the problem in different industrial sectors.
- To estimate the return that will result when applying the recommendations to be presented by the study, and to follow-up with implementing these recommendations in two industries to be chosen.

Research Agency: National Research Center

Date and P.O.P.: December 1979 - 36 months

Budget: LE 62,300 local and LE 66,500 foreign

Balance: LE 28,636 local and LE 31,241 foreign

Important Results:

- The cost resulting from corrosion was estimated in the following sectors: Military forces - Agriculture - Electricity - Petroleum - Industry - Transportation - Education and Scientific Research.
- The cost of corrosion in Egypt was estimated at LE 387.4 Million
- Rate of corrosion (3.21) represents about 63% of the gross national income.*
- The research arrived at recommendations which will decrease the losses.

B.A.: Sectors of production and services in Egypt

2/5 To improve the technological properties of woven materials from natural and artificial fibers by both chemical and radiation treatments.

Goal:

- To study the effect of high radiation levels on the performance of fibers used in surgurical procedures.
- To improve the properties of mixtures of cotton and polyester, such as: dying capability, and decreasing wrinkling.
- To add to the properties of artificial fibers the property of ease in eliminating oilspots.

Elements of Study:

To treat the fibers and woven materials with special chemicals and to perform the reaction in the presence of gamma rays radiating from Cobalt Units 60.

*As written

Research Agency: Nuclear Energy Authority

Date and P.O.P.: June 1974 - 36 months

Budget: LE 10,500 local, LE 13,000 foreign

Balance: LE 4,000 local, LE 6,000 foreign

Important Results:

- Treatment of cotton materials with gamma rays (to resist fire) was done.
- Chemical radiation methods were applied to treat cotton materials against attack by bacteria and mold.
- Excellent dying results for materials(which are mixtures of cotton and polyester) was reached by using the radiation treatment.
- Treatment of artificial fibers to make them easier to clean off oilspots.

B.A.: Industry of surgical dressing and bandages - spinning and weaving industry of mixtures of cotton and polyester

2/6 Use of starch in manufacturing cardboard boxes

Goal: To develop an ideal starch mixture that fulfills the following conditions:

- Savings in cost
- Better adhesive properties
- Use of local resources whenever possible
- Ease in opearting the machines
- Finding alternatives for starch in case of its shortage.

Elements of Study:

- To study both the chemical and physical properties of locally produced starch.

- To modify those properties in order to meet the desired characteristics
- To evaluate the effect of different additives on the adhesive property and to determine the best ratios of those additives.
- To develop the best methods for producing starch.
- To determine the ideal circumstances for using starch.

Research Agency: Stars, Yeast and Cleaners Company

Date and P.O.P.: October 1981 - 18 months

Budget: LE 7,500

Balance: LE 4,000

Important results:

- The research team developed the ideal mix.
- Practical implementation of the results (in the Verta Company and Moharam Company) gave the expected return as a result of modification in the mixture components. Percentage of solid matters was reduced.
- The study proved that there is no appreciable difference between starches made from any source in Egypt, i.e. (rice - corn) as far as the sticking property is considered.or in the percentage of solids. This ensures the continuity of starch production.

B.A.: Moharam Industrial Printing Company - Verta Paper Manufacturing Company.

2/7 Production of woven fabrics from mixtures of natural fibers and locally produced polyester

Goal:

To produce mixtures of natural fibers and locally produced polyesters for use in the ready-made clothing industry.

Elements of Study:

- To collect statistical data on the production and use of polyesters locally and universally.
- To formulate the plan of the research team.
- To form common research groups in each of the production units.
- To buy all necessary raw materials for operation.
- To perform the spinning and weaving processes in some of the existing factories and to perform chemical studies.
- The stage of final evaluation

Research Agency: National Research Center

Date and P.O.P.: August 1982 - 36 months

Budget: LE 100,000

Balance: LE 80,000

B.A.: Some industrial firms concerned with this subject.

2/8 To recycle the whey which results from the manufacture of cheese.

Goal: To use the whey in producing some nurishing food products such as the proteins and lactose.

- To save the expenses involved in draining the whey into sewers, rivers, and the sea.

Elements of Study:

- To recycle the whey (in its natural form) for extracting soybean milk and to add it to different dairy products.
- To analyze the whey in its basic components (protein and lactose) by different filtering methods.

Research Agency or Agencies: Faculty of Agriculture, Cairo University - National Research Center - Faculty of Agriculture, Zagazig University.

Date and P.O.P.: August 1982 - 36 months

Budget: LE 107,000

B.A.: Misr Dairy and Food Company

3. Specific Council for Oil, Energy, and Mineral Wealth

3/1 Increasing the production of solar (diesel fuel) by decreasing the distillation temperature to 350° C. and to evaluate the effect of reducing the temperature on the performance of the solar.

Goal:

To increase the solar volume produced through reducing the distillation temperature to 350° C (and lower) without affecting the performance of the solar in motors.

Elements of Study:

The project is divided into five stages and each one has its function.

First Stage:

This includes performing analyses, chemical tests and non analogous performance tests on basic mixtures.

Second Stage:

This includes performing analyses, chemical tests, and the analogous performance tests on basic mixtures.

Third Stage:

This includes performing analyses, chemical tests, and model performance tests on more specific mixtures.

Fourth Stage:

This includes field performance tests on the distinguished mixtures.

Fifth Stage:

This includes evaluation of the results and preparing the final report.

Research Agency: Ghamra Research Center in Misr Petroleum Company

Date and P.O.P.: May 28, 1981 - 18 months

Budget: LE 80,000

Balance: LE 40,000

B.A.: Oil Authority and Transportation Sector

Important Results:

Both the general and particular chemical compounds of samples of solar were retrieved at 350° C.

3/2 To study means of improving the chemical compound for the best performance in order to increase the time the compound is being used while meeting the requirements by the model performance tests.

Elements of Study:

It is made up of three parts.

a. Chemical analysis and tests

b. Laboratory performance tests

c. Field performance tests

Research Agency: Petroleum Research Institute, Misr Petroleum Research Center.

Date and P.O.P.: March 1982 - 18 months

Budget: LE 175,000

Balance: LE 49,685

B.A.: Transportation and communications sector - Industrial Sector - other production sectors

3/3 To improve the properties of the softening point and the rate of flow of both the heavy and medium oil distillation products to meet the specification requirements.

Goal: To find a solution for the chronic problem of the high softening point of the heavy and medium oil distillation products (produced locally) in order to ease their handling, to raise their properties to world standards, and to save energy used for heating those products before use.

Elements of Study: There are three stages

a. Physical treatment of heavy products

b. Laboratory evaluation for the treated products with additives

c. Field evaluation for the treated products with additives

Research Agency or Agencies: Petroleum Research Institute - Misr Petroleum Company's Research Center in Ghamra.

Date and P.O.P.:	May 28, 1981 - 18 months	
Budget:	LE 80,000	
Balance:	LE 10,000	Petroleum Institute
	LE 10,000	Ghamra Center

Important Results:

To perform field experiments to identify the extent of heat evaluation effect on the flow properties of heavy oil distillation products.

B.A.: Transportation and Communications Sector - Industrial Sector, and different production sectors.

3/4 To evaluate and improve the quality of asphalt and to control its specifications

Goal: To determine the quality of asphalt and its properties (such as the improved aging properties) which can benefit the asphalt mixtures so that all engineering requirements are satisfied.

Elements of Study:

1. To determine the chemical, physical and engineering properties of mixtures of used asphalt.
2. To determine the improved aging properties of used asphalt in the lab.
3. To compare between the aging properties of different types of asphalt.
4. To introduce improvements in asphalt produced locally.

Research Agency of Agencies: Petroleum research Institute - public road and bridges authority

Date and P.O.P.: LE 75,000 local - LE 215,000 foreign

Important Results:

It has been agreed that 2,000 meters will be paved. The distance will be divided into eight sections. These sections will cover all possible combinations of the paving layer and the surface layer.

B.A.O.: Public road and bridges authority.

3/5 Use of energy generated from water resources

Goal: To benefit from electrical energy generated and to use it locally for different purposes.

Elements of Study:

- To collect the data
- To perform field measurements

- To analyse the data
- To test the priorities of suitability of different sites
- To perform field study
- To perform feasibility study

Research Agency or Agencies: Ministry of Irrigation - Qattara Depresstion Authority

Date and P.O.P.: June 22, 1981 - 24 months

Budget: LE 60,000

Balance: LE 49,000

Important results began:

The study began with the collection of a good portion of the data Coordination was arranged between the research group and an Austrian group performing similar work to obtain available data. There are negotiations going on with the World Energy Commission to obtain additional financing.

B.A: Ministry of Irrigation

3/6 Study on desalination units in Egypt

Goal: To determine the best method for supply the new communities with water.

Elements of Study:

- To determine the best method of desalination
- To evaluate both technically and economically the present desalination units used in Egypt.
- To have a general plan on how to best use the available resources to formulate a research program to solve the problems of desalination units used in Egypt.

Research Agency or Agencies: Atomic Energy Authority

Date and P.O.P.: May 1, 1982 - 12 months

Budget: LE 2,000

Balance: LE 300

3/7 Preparation of geological map of Egypt

Goal:

To prepare the basic maps of special importance for scientific exploration for : oil, minerals, underground water, and other elements of economic resources

3/7A Preparation of mapping of sub surface formations

Elements of Study:

- To prepare a map of the Upper Cretaceous formation and maps for the thickness of that formation
- To prepare the sub surface geological maps

Research Agency; General Petroleum Co.

Date and P.O.P.: April 17, 1974 - 120 months

Budget: LE 50,000

Balance: LE 13,750

Important Results:

- To survey exploration wells that were dug (on the national level)
- To locate sites for new wells
- To study and analyze the data obtained in order to determine the strategic limits of the formations and to compare the data with previous information by using the electrical cross sections and paleontological data.

3/7B Project for preparation of gravitational map of Egypt

Research Agency: General Petroleum Co.

D. & P.O.P.: April 17, 1974 - 120 months

Budget: LE 1,000,000

Balance: LE 250,000

Important Results:

The research group reviewed all available "oasis of irregular gravity" on regional mapping, detailed mapping, and the basic network.

3/7C Map of standard calibrated magentic field

R.A.: Meteorological Institute

Date and P.O.P.: December 30, 1974 - 60 months

Budget: LE 47,317 local - LE 30,000 foreign

Balance: LE 1,175

Important Results:

- Field survey on most parts of the country which were accessible.
- To calculate both the vertical and horizontal components of the magnetic field, the angle of deflection, and the intensity in all points. Values were updated to 1977.
- Maps for the distribution of magnetic field in Egypt for the above mentioned period were finally drawn.

3/7D To prepare the magnetic radiation map

Research Agency: Nuclear Matters Authority

Date and P.O.P. May 1, 1974

Budget: LE 1,000,000 local - LE 500,000 foreign

Balance: LE 400,000 local - LE 499,070 foreign

Important Results:

Contour maps were drawn for the magentic and radiation fields in part of Egypt, covering 200,000 square kilometers.

4. Specific Council for Health and Medicine

4/1 To evaluate the intensity of the disease with the number of ova present in the stools and urine.

Goal: To determine the relation between the number of ova and the intensity of the disease.

Elements of Study:

- To collect the eggs in samples from still waters.

Research Agency:	Faculty of Medicine, Ein Shams University
D. & P.O.P.:	November 1974 - 48 months
Budget:	LE 8,900 local - LE 1,800 foreign
Balance:	LE 2,925 local - LE 1,800 foreign
B.A.:	Faculty of Medicine - Ein Shams University Ministry of Health

4/2 To study changes in the immune system of Bilharsia patients with cirrhosis

Goal:

- To study the antibodies and to electrically separate proteins and antibodies.
- To study the changes in the immunity of the liver, spleen, lymph glands and spinal fluid.
- To study the effect of medicines used to fight Bilharzia and anti-body formation.

- To study the antibodies and the effect of electrophoresis on antibodies and proteins.

Elements of Study:

- To study the antibodies, and to separate proteins and antibodies electrically.

To study the changes in immunity of the liver, spleen, lymph glands, and spinal fluid.

- To perform a laboratory study on the effect on immunity in mice and monkeys which are infected with Bilharzia.
- To study the effect of medicine used to fight Bilharzia on antibody formation.
- To study the effect of food on antibodies.
- To study the effect of poisonous medicines and stimulants on immunity function of the liver.
- The experience gained by the researchers will lead to forming the first research center on immunity.
- Choice of cases and methods for performing research

a. Choice of the cases

This research will be performed in the central lab of the botany department, faculty of Medicine, Alexandria University. The center is equipped with beds and is capable of performing laboratory and clinical studies. Also, the center has facilities for testing and treating animals. Bilharzia will be diagnosed after both clinical and lab tests for the Bilharzia eggs, skin sensitivity tests, and liver biopsy. The cases will be divided into:

- 25 cases that have enlarged livers because of Bilharzia
- - 25 cases that have enlarged livers and spleens due to Bilharzia.
- 25 cases that have liver shrinkage without cirrhosis.
- 25 cases of cirrhosis.

The effect of medicine against Bilharzia will be studied in different dosages and also the effect of food and infections will be studied.

b. Laboratory Research

- A complete blood count and biopsy
- To study the anti-bodies by performing the Mancini test
- To measure the effect of Rheumatoid and the antibodies on the Nucleus.
- To study the immunity of the lymph cells
- To study the test of grouping the lymph cells
- To study the sensitivity of skin to shortage of matters, such as petoberklien
- To study the effect of the filmito factor on the lymph cells
- A pathological study on the liver, spleen and the lymph glancs
- To study the immunity of the cells
- To study the radiation measure of antibodies
- To evaluate the effect of antibodies in monkeys and mice (attacked by Bilharzia).
- Liver function:
    - To measure different liver enzymes
    - To measure the bloodine in the blood
    - To perform the salvaline test

Important Results:

Research personnel made a great effort to establish the study of cell immunity in the disease of Bilharzia liver cirrhosis which explains many of the symptoms associated with it. Also, they studied ways of controlling the disease and establishing a method of treatment and its side effects. To fulfill the aims of the research, immediate funds are needed so that the project can continue, especially since

many results have been recognized by world experts in the field.

4/3 Bilharzia liver cirrhosis

Goal:

- To evaluate factors resulting in Bilharzia liver cirrhosis
- To identify the best treatment for control of Bilharzia liver cirrhosis
- To study the chemical make up of the attacked cells
- To perform a histo-chemical study on Bilharzia liver cirrhosis
- To evaluate the effect of medicine that could stop liver cirrhosis.
- To perform some tests on mice with liver cirrhosis.
- To evaluate the effect of some medicine used to treat Bilharzia on liver cirrhosis
- To study the relation betwen liver cirrhosis and the immune system

Research Agency: Faculty of Medicine, Alexandria University

Date and P.O.P.: September 4, 1979 - 36 months

Budget: LE 39,000 local - LE 44,000 foreign

Balance: LE 16,500 local - LE 44,000 foreign

4/4 The benefit of injecting the varices of the esophagus with clot forming materials to stop the bleeding which results from B.L.S.

Goal: An applied clinical research to analyze the rate of injecting the bleeding esophagus with clot forming materials in both the treatment of Bilharzia and protection from it.

The results have been encouraging and unharmful. Injection proved successful in stopping the bleeding in 75 % of the cases (25 % deaths). These are very encouraging results compared to other methods presently available (surgery or the pressing tube) where the death rate is twice that of the injection method.

Elements of Study:

A complete training project for doctors and nurses on the injection of bleeding varices of the esophagus.

Research agency: Faculty of Medicine, Cairo University

Data and P.O.P.: 36 months

Budget: LE 42,000 local - LE 3,200 foreign

Balance: LE 31,500 local - LE 3,200 foreign

Important results:

The project is still in the preparatory stage.

4/5 T.B. Laboratory Research

Goal:

A bacteriological study on T.B.

Elements of Study:

A thorough evaluation of the size of the problem, its characteristics and its direction in the Egyptian environment, both urban and rural.

- To evaluate the present status of fighting the disease, and to identify any shortages.
- To evaluate methods used to fight T.B. and their results in the Egyptian environment and in local conditions.

Research Agency: Faculty of Medicine, Cairo University

Date and P.O.P.: December 1974 - 120 months

Budget: LE 25,175

Balance: LE 7,767

Important Results:

Sensitivity tests that were performed on samples for T.B. taken from sick humans (both in the Delta and Cairo) showed the complexity of the resistance of the T.B. bacteria to different medicines used, except for Rivampcine and Ethamibitol, to which the germ was more resistant to them in the sick people of Cairo then those in the Delta. This could be due to the fact that those two medicines have long been in use in Cairo, but have been used in a limited manner in the Delta.

- The sensitivity tests performed on the different drugs showed varying percentages of resistance. This is indicated in the following manners: Streptomycin - 34.5%; Izoniazide - 29.5%; Ethionamide - 19.5%; PAS 14%; Rivampcine - 6%; and Ethamibitol - only 5%.
- Research workers concluded that the results were expected with Ethamibitol and Rivampcine. They recommended their use, without performing sensitivity tests, for patients who were using different medicines with no positive response.

4/6 T.B. research in Kafr El Sheikh area

Goal:

- To evaluate the volume of the T.B. problem in that area.
- To study the role of rural health units and fighting T.B.

Elements of Study:

- A detailed study of the epidemic condition of the disease.
- Research on the tuberculin test and its reactions
- Research about vaccination with the BCG vaccine
- To recommend the best way to discover the new cases of T.B.
- Research as to treatment by medicines

Research Agency: Ministry of Health

Date and P.O.P.: December 1974 - 120 Months

Budget: LE 76,320 local currency - LE 54,107 foreign

Balance: LE 22,213 local currency

Important Results:

- The tuberculin test for citizens of Mashala village in Sharkia: Showed positive reactions for the age groups 0-40 of 30.84 % for the unvaccinated and 36.11 % for the vaccinated. The vaccination coverage with BCG was only for 35% of the population.
- The tuberculin test for the Sinai showed the following resuts (for age 0-40): Positive reaction for 31.45% of the unvaccinated and 45.03% for vaccinated people; which compares with the Mashala results while the percentage of BCG vaccine coverage in Saini was only 22.01%.
- Within the school student group (age 6-12 years) in Mashala village the results were 6.4% for unvaccinated students and 28.78% for vaccinated students, while the BCG coverage was 39.6%. If these results are compared to similar results in Kafr El Sheikh, we'll find that the percentages are 11.9% for the unvaccinated which is almost twice that of Mashala village.
- In preparatory school in Mashala (age 13-15 years) the positive reaction of the tuberculin test was 14.28% while it was 28.47% in Kafr El Sheikh (again twice that of Mashala).
- X-ray results for Meshala people showed suspected T.B. cases were

1.42% of sample chosen (17 out of 1545 people).

By comparison, the suspected T.B. cases for the outside clinic in Kafr El Sheikh general hospital were 0.99% (14 out of 1410 people).

While the comparison is not analogous, the suspected percentage of T.B. in Sinai was higher than that of Kafr El Sheikh. This gives the impression that T.B. cases in Sinai have a much higher percentage than in Kafr El Sheikh

4/7 T.B. Research in Assuit

Elements of Study:

Goal:

- Research on the tuberculin test and its reaction.
- A study about vaccination with B.C.G.
- To recommend the best way to discover the new cases of T.B.
- A research on methods of treatment.

Elements of Study:

- A detailed study about the epidemic condition of the disease.
- A research project on the tuberculin test and its reaction
- A study on vaccination with the B.C.G. vaccine
- To choose the best way to discover the new T.B. cases
- Research on treatment by medicines.

Research Agencies: Faculty of medicine, Assuit University

Date and P.O.P.: October 5, 1974 - 120 months

Budget: LE 76,320 local - LE 56,610 foreign

Balance: LE 19,710 local

Important Results

1. To evaluate the results of using the movable x-ray machine (now in assuit for more than one year) for discovering new cases of T.B.

2. To device a plan for applying direct supervision of discovered patients to guarantee continuation of their treatment. To evaluate the system in order to, hopefully, adapt it in different areas.

4/8 A study regarding types and rates of side effects for medicines used to treat T.B. in Egyptian patients.

Goal:

To identify percentages of occurence of side effects, and the types of side effects, with each type of medicine.

To study the effect of being afflicted with parasites on the degree and percentage of side effects.

To choose the best medicines, with the least harmful effect, in treating T.B. in general, and specifically in patients who are afflicted with parasites.

Elements of Study:

First Stage (two years):

1. Review previous research work.
2. Buy equipment
3. Prepare the medicines
4. Perform some preliminary field studies.

Second Stage (three years):

To perform some laboratory and clinical research work in the suggested locations.

Third Stage:

Which includes the last 6 months of the previous stage to analyze the data, draw the recommendations, and write the final report.

Research Agencies: Faculty of Medicine, Al Azhar University

Date and P.O.P.: September 4, 1979 - 48 months

Budget: LE 47,000 local - LE 16,000 foreign

Balance: LE 14,031 local - LE 1,180 foreign

Important Results:

- The study included checking 111 patients, some of whom were afflicted with Bilharzia. They were grouped into six groups. Each group would take one medicine for treatment of T.B.
- Some side effects were observed, especially the effect of medicine on the skin, digestive system, liver and nervous system. 39 blood analyses were done among the patients (35.13%).
- The best treatment was then suggested for each case to avoid side effects.

B.A.: The Academy - Ministry of Health - T.B. Patients - Faculty of Medicine, Al Azhar University

4/9 Plasma Alternatives

Goal:

To furnish the need of the country and the military forces for plasma and its alternatives.

To increase the country's balance of foreign currency.

To rationalize the production of plasma alternatives and to raise the production of plasma alternatives and substitute solutions for hemoglobin.

Elements of Study:

To produce the gelatin solution and use it as a substitute for plasma. The solution should have the same pharmacological, physiological and osmotic properties of the blood. The solution should not have any

poisonous, feverish, or anti genetic effects. Scientific experiments were performed to test the above mentioned factors. These experiments were done in the plasma laboratories of both the Egyptian Authority for biological and vaccine products, and the Faculty of Medicine, Ein Shams University.

Accordingly the Gelatin solution known as hemogel was produced and recorded under the Number 12013 in the laboratories of the Ministry of Health.

Research Agencies: Laboratories for plasma and anti-coagulant solutions.

Date and P.O.P.: August 5, 1979 - 24 months

Budget: LE 23,400 foreign currency

Important Results:

During the period mid-May to mid-January 1980 the following took place:

1. 7,000 bottles of 500 cc capacity each of the plasm substitutes were distributed to the Ministry of Health hospitals - different medical zones and to some private hospitals in Cairo. Follow-up showed no recording of any side effecte from injections.
2. In the meantime and parallel to result number 1, it was prooved that the gelatin solution does not have any antigenetic effects with repeated injections - in different time periods - for both normal people and people having natural antibodies for gelatin.
3. Production currently is modest. The rate is about 2000 bottles a month. The authority plans increasing the production to 200,000 bottles per year.

B.A.: Cancer Institute, faculties of medicine, hospitals, and Ministry of Health

4/10 The possibility of extracting albumin, gamma globulin from plasma the date for use of which has expired.

Goal: To benefit from dry plasma after its date of use expires.

Elements of Study:

To determine the time span for maximum storage of plasma, starting with five years and then less time, after which the most benefit is obtained in producing albumin.

R.A.: The Egyptian Authority for biological and vaccine products

D. & P.O.P.: August 22, 1978 - 24 months

Budget: LE 56,000 local currency - LE 400 foreign

Balance: LE 2,800 local currency - LE 400 foreign

B.A.: Ministry of Health

4/11 To collect, group, and follow-up the studies on research for medicines.

Goal: To follow-up and continue with the candidate research work for both application and industrial investment.

Elements of Study:

First of all, the scientific effort for every individual researcher will be surveyed.

- The research work will be collected and grouped (especially the research common to either the subject or the personnel). This will be a guide for future research.

- The research which can be applied in practice will be summarized and published in bulletins, which will be at the service of both medicine industries and scientific research.

R.A.: Research and Surveillance Authority - in the Pyramids area

D. and P.O.P.: February 1982 - 24 months

Budget: LE 37,114 local

Balance: LE 20,134

B.A.: Faculties of Medicine - Medicine manufacturing companies - National Research Center - Ministry of Health - Faculties of Pharmacology - Medical Research Institue

4/12 Evaluation of Glaucoma treatment methods

Goal: To evaluate the methods of treatment for glaucoma in Egypt, and to try to choose the method that leads to the best results under Egyptian living conditions and environment.

Elements of Study:

1. Clinical tests which include tests using the ophthalmoscope
2. Testing the eye pressure with the Scheofs-Goldman instrument
3. Testing the vision acquity
4. Checking the eye fundus to see how the optic nerve adapts to high eye pressure
5. Checking the scope of vision using the Mezzidman instrument.
6. Checking the angle of the corneal-scleral junction and whether it is open or closed with contacts between the iris and the cornea.

R.A.: Faculty of medicine and Cairo University hospitals

D. and P.O.P.: June 1978 - 48 months

Budget: LE 41,800

Balance: LE 11,550

Important results:

The final results will not be available for a period of between one to three years since some changes are possible after the operations.

4/13 To test any physiological, chemical, anatomical, or genetic changes that take place on test animals due to diet.

Goal:

To test the effect of intensified diet for long periods of time on test animals, in order to formulate measures for preserving food by radiation and measures taken with imported food subjected to radiation.

Elements of Study:

- To prepare the farm for test animals which is to be constructed in an industrial environment.
- To prepare test foods
- To perform laboratory experiments on test animals
- To train members of research teams on different study methods.

R.A.: Atomic energy authority

D. and P.O.P.: June 1974 - 48 months

Budget: LE 17,900 local currency - LE 18,000 foreign

Balance: LE 8,250 local currency - LE 18,000 foreign

Important results:

- Test animals were fed with balanced food diets that had been subjected to radiation.
- The natural rates of blood components were determined for test animals.
- A sample of the chromosomes of the test animals was studied.
- The sugar level in the blood and the glycogen level in the liver were determined.
- Microscopic sections of the different organs of mice (before being fed the radiated potatoes) were made.

4/14 The effect of being subjected to different levels of ionized radiation on the medical dressings, such as: bandages, gauze, gloves, and medical containers.

Goal:

- To study the extent of microbic contamination of medical and surgical products
- To test the sensitivity of different kinds of microbes (that infect medical dressings) to radiation.
- To test the relation between the level of radiation and the resulting level of sterilization for medical products.
- To study the effect of radiation on the technological properties of medical products.

R.A.: National center for the research and technology on radiation.

Date and P.O.P.: July 1974 - 48 months

Budget: LE 17,000 local - LE 15,000 foreign

Balance: - LE 15,000 foreign

4/15 Medical and surgical needs and medicine containers that are sterilized by ionized radiation

Goal:

To test the effectiveness of sterilizing samples that are saturated with the suitable radiation level, and the extent of conforming with the specifications that permit their use for both treatment and medical purposes.

Elements of Study:

- To perform tests for determining the presence of bacteria (and also viral tests) to check any living organisms present on the products subjected to radiation.

- To estimate the number of living organisms in any sample that had been subjected to radiation.

R.A.: Atomic Energy Authority - Ministry of Health

Date and P.O.P.: July 1974 - 48 months

Budget: LE 15,000 local & LE 1,200 foreign

Balance: LE 9,000 local & LE 1,200 foreign

4/16 An applied study on the effectiveness of sterilizing medical dressings by radiation.

Goal:

- To study the effect of the extent of microbic contamination during the process of preparing medical dressings in order to study the effectivenss of sterilization by radiation.

Elements of Study:

- To study the degree of contamination under local conditions and environment.
- To evaluate the effect of the processes of preparation on the degree of contamination of dressings.
- To study the improvement of the specifications of sites of preparing dressings.
- To perform the sterilization tests by using powerful radiation units.
- To perform the physical and chemical tests on dressings sterilized by radiation.
- To study the effect of storage and the effect of environmental factors on both the sterilization and the efficiency of medical dressings.

R.A.: Medical services for the Military Forces

Date and P.O.P.: December 1975 - 24 months

Budget: LE 14,000 local currency - LE 6,068 foreign

Balance: LE 2,922

4/17 To study the effect of high levels of radiation used for bacterial sterilization on the chemical, physical, and mechanical properties of medical dressings and medical packages made out of plastic, rubber or latex.

Goal:

To test the changes due to radiation on chemical, physical, and mechanical properties of medical supplies and or medical packages made out of plastic, rubber and latex.

To derive different coefficients to raise the resistance of plastic and latex to radiation effect.

To choose the most suitable plastic materials for the manufacturing of medical and surgical supplies, and medicine packages - which retain their technological properties after being subjected to radiation for sterilization purposes.

Elements of Study:

1. To study the effect of different dosages of gamma radiation (8.64, 17.8, and 25.93 megarod) on varnishes and oils.
2. To study the effect on the varnishes and paints which contain colors and filling matter and to measure the remaining physical and mechanical properties of the varnishes and paints.

R.A.: Atomic Energy Authority

D. and P.O.P.: October 1974 - 48 months

Budget: LE 15,000 local and LE 16,500 foreign

Balance: LE 16,500 foreign

4/18 The effect of gamma radiation on the biological properties of bone marrow

Goal: To formulate a national policy to have banks of bone marrow that will supply hospitals with those sensitive cells that could be

transplanted as a quick and effective treatment to patients who were subjected to environmental radiation.

Elements of Study:

1. A detailed study on the changes that take place to the bone marrow cells as a result of being subjected to radiation. The research will include the effect of radiation on bone marrow and the immunity system and to transplant the bone marrow of test animals subjected to radiation with bone marrow from animals of the same species.

2. A detailed study on preserving bone marrow cells by refrigeration, and the effect of that on the biological properties of the cells, and a study on the effect of time on the properties.

Research Agency: Faculty of Medicine, Cairo, University

Date and P.O.P.: June 1979 - 36 months

Balance: LE 17,650 local and LE 21,000 foreign

4/19 To perform pharmacological tests on some medicines which are sterilized by radiation.

Goal:

To determine the effect of radiation levels necessary for sterilization on the properties of some pharmaceutical materials.

To test any poisonous effect on the materials and solutions that were subjected to radiation (for sterilization)

Elements of Study:

1. To perform a pharmacological study about the effect of radiation on the effectiveness of the Dixamethazones.

2. To perform some studies on the testosterone hormone and bions of (teston - fulon - and leonon).

3. To perform a study on the effect of sterilizing substitute solutions packed in sacks made of chloride polyvinyl and polyethylene and the effect of sterilizing on some plastic compounds (such as lead compounds)

which are used as stabilizers. Also, a study will be performed on the accumulation of lead in the solutions and the extent of their poisonous effect.

R.A.: Atomic energy - Faculty of Pharmacology, Cairo University

Date and P.O.P.: August 1979 - 24 months

Budget: LE 2,000 local and LE 2,000 foreign

Balance: LE 1,000 local and LE 1,000 foreign

4/20 Effect of using grains and their products which have been treated with radiation.

Goal:

To study the effect of using grains and their products which were treated by radiation on the blood of test animals, the cells, future generations, functions of different organs, and vitamin and mineral levels.

Elements of Study:

1. To have beans, barley, and wheat subjected to doses of gamma radiation (between 15,000 to 6,000 Rad). Then use these grains as food for test animals which include: rabbits, white mice, and Nicols chickens.
2. To evaluate the chemical changes that take place in the bones of both males and females that were fed radiation-subjected grains.
3. To study the effect feeding on radiated grains has on the syrum of the immune system and the different globulins.
4. To study the histology of the different organs of the body.

R.A.: Agriculture Research Center

D. and P.O.P.: December 1974 - July 1981 - 36 + 24 months

Budget: LE 24,660

Balance: LE 7,250

Important Results:

Following are the important results of the first stage only (1974-1977)

- No symptoms of any reaction showed in animals that were fed for two months on grains that had been subjected to radiation (and which were stored for a month after radiation). The tests showed no change in any of the important diet elements, such as a shortage of Vitamin B, or Vitamin A, or Vitamin H.
- The sedimentation rate was not affected, nor was clotting time or the total number of red blood cells or the hemoglobin, except in poultry, where there was a decrease in both hemoglobin and the sedimentation rate, without showing in the the total number of red blood cells.
- The total count of the white blood cells was not affected.
- The values for calcium, non organic phosphorous, and magnesium in the serum of those animals were not affected either during the radiation process of the digestion process.
- No change showed on either the level of carotines or the level of Vitamin A in the serum and the liver. However, the relation between the carotines and Vitamin A, whether in the serum or stored in the liver, points to the possibility of some changes in the factors that change the carotines to Vitamin A in the intestines of the animals.
- There was no appreciable change in the level of fats in the blood of test animals. However, the total cholesterol level was affected in the rabbits, and so was the level of free cholesterol in the chickens that were fed on grains subjected to limited radiation. Total cholesterol was affected in the case of mice which had been fed grains subjected to a large dosage of radiation.
- The liver functions were not evaluated.
- The levels of enzymes studies were not affected as a result of feeding on radiated grains.

5. Specific Council for Research on Environment

5/1 Study on Air Pollution in Shobra El Kheima

Goal:

To determine sources of air pollution in the area

To evaluate the levels of pollution by field measurements for specific points in the area.

To locate certain points as fixed observation points for measuring levels of pollution in the future.

To evaluate the effect of pollution on the health conditions of both residents and workers.

To devise a plan for limiting pollution through successful planning for both industrial and urban expansion, and to determine the standards not to be exceeded.

Elements of Study:

1. Detailed planning for the project and preparing the preliminary survey and questionnaire sheets.
2. To provide the required instruments, chemicals, and lab equipment.
3. To train the need technical personnel.
4. To survey the sources of pollution in the area.

R.A.: Faculty of Medicine, Cairo University

Date and P.O.P.: June 3, 1974 - 60 months

Budget: LE 45,660 local currency - LE 30,300 foreign

Balance: LE 6,751

Important Results:

1. General medical check-ups and lung function tests were performed for 1525 residents of Shobra El Kheima to evaluate the effect of

pollution on their health condition. The following was noticed:

280 cases of chronic bronchial asthma

424 cases of ashmatic bronchial catarrh

Cases caused by air pollution represented 45% of the total sample.

2. Lung function tests were performed on 1523 industrial workers in the area. They were chosen at random from among 4800 workers in the weaving industry. 11% were found to be sick because of air pollution in the area.

3. A sample of preparatory school and high school students in the area was checked. 7% of the total sample, which contained 1200 students, were sick due to air pollution in the area.

4. Air pollution agents, such as: dust, smoke and sulfur dioxides were surveyed and the effect of those polluting agents on agricultural soil properties and the crops was initiated as a topic for study.

B.A.: Shubra El Kheima area

5/2 Study on air pollution in Alexandria.

Goal: To determine the sources of pollution, such as: industrial, commercial, and human sources. To evaluate the effect of traffic on pollution in different areas of Alexandria. To measure the levels of air pollution for five consecutive years which will be kept as a record for the future to indicate fluctuation of that level. To find ways to limit pollution.

Elements of Study:

To collect samples and analyze them in 6 districts which represent the different activities in the city. The six sites are:

- Social Union building in Eldekhila
- Pumping station building in El Mex
- Amerya suburb building in Mena Elbasal

- National spinning company in Ragheb
- The building of the public health institute
- The electricity building in El Montaza

R.A.: Public Health Institute - Alexandria

D. and P.O.P.: July 6, 1974 - 60 months

Budget: LE 34,555 local - LE 20,877 foreign

Balance: LE 5,214 local

Important Results:

1. It was found that the levels of concentration of falling dust, hanging dust, and sulfur dioxide are higher than the persmissable levels. The other polluting agents are less than (but close to) the maximum levels allowable.

2. It was found that Abu Keer area is clean. However, the absence of scientific planning and the building of factories in the area will lead to pollution in Abu Keer.
It is therefore necessary to follow the results of the research in planning and choosing sites for new industries.

B.A.: Industrial areas in Alexandria

5/3 To study the economic values of solid wastes in Helwan and Shubra El Kheima.

Goal:

To survey the existing factories and their solid wastes.

To classify factories' wastes in both principal groups and specific groups concerning their qualities and quantities.

To perform physical, chemical and microbiological analyses in order to identify the properties of each group as a base for choosing

the best means of benefiting from them, or getting rid of them.

To perform the lab and applied research in the specialized research centers on some of the groups, and to evaluate the results.

To suggest lab solutions and semi-industrial solutions for either recycling the waste or getting rid of it - taking into consideration both environmental and economical conditions.

To devise a plan for the economic recycling of solid waste in cooperation with the concerned industrial agencies and the local administrative authorities.

Elements of Study:

1. To perform a field survey for Helwan and Shobra El Kheima.
2. To classify solid wastes as to source, chemical and micro-biological properties, methods of getting rid of, and methods of recycling and treating the wastes for economic benefits.

R.A.: National Research Center

Date and P.O.P.: July 10, 1974 - 36 months

Budget: LE 31,000

Important Results:

It was possible to use iron slag resulting from the iron and steel industry in the ferro-cement industry, cement brick industry, and iron sulfates. It was also possible to use wastes of starch and glucose industry to manufacture animal fodder.

B.A.: Industrial sector in Helwan and Shobra El Kheima

5/4 To plant part of the beach west of Borollos

Goal:

To study the effect of planting soil that is stabilized; eliminating sand movements; stabilizing sand dunes and soil sliding.

Elements of Study:

1. To choose the site in the Eastern* part of Borollos where there are areas that are attacked by sand dunes.

2. To evaluate the effectiveness of having plants and trees protect the beach and the neighboring areas. This will be done by planting and maintaining these areas.

3. To expand in importing marine weeds, trees, shrubs, and other plants that grow on beaches.

R.A.: Land and water Institute (Agricultural Research Center)

Date and P.O.P.: June 1980 - 7 months

Budget: LE 7,600

Important Results:

- Trees and plants can resist storms and bad weather conditions.
- The repeated planting helped the stability of the soil to a great extent.

B.A.: Borollos area.

5/5 National project for stabilization of sand dunes

(prepare the textbook about sand dunes and experiments on how to stabilize them)

Goal

- To collect all studies and data about sand dunes
- To limit movement of dunes with all available methods, such as: Use of chemicals, use of petroleum products, and planting trees.

*As written

Elements of Study:

1. To execute the project in three areas:

a. Borollos area which will be carried out by the Land Research Institute.

b. Yellow mountain area which will be carried out by the Petroleum Research Institute.

c. El Arish area which will be carried out by the desert institute.

2. Field tests which include:

a. Stabilization by planting dry plants, by using oil emulsions, and by using Texan and other materials.

b. To perform experiments on cultivating wood trees or grass (weeds).

c. To perform experiments on partial irrigation from different water sources.

R.A.: Desert Institute - Petroleum Research Institute in cooperation with the Arab Contractors

Date and P.O.P.: October 1980 - 60 months

Budget: LE 10,000

Important Results:

A book is being prepared now about sand dunes. This book is made up of two parts.

Part One: Historical and includes the following:

- Experiments that were performed in the Boseeley area
- Experiments that were performed in the Ras ElHekma area
- Experiments that were performed in Oases areas
- Experiments that were performed in the El Arish area prior to 1967.

Part Two:

This includes the study of the geological, geographical, physical, hydrological, and geochemical properties of sand dunes and the conditions of sand dunes with plant cover.

B.A.: Coastal areas in Egypt - Qaliobia Governorate (El Gabal Al Asfar and Abu Zabaal areas).

6. Specific Council for Transportation and Communications Research

6/1 To study methods of developing national and international transportation systems using standard packaging (containers).

Goal:

To expand in applying the standard packaging system (containers) to freight transportation while elminating the present conventional system.

To solve the problem of port congestion due to the ease of unloading containers from ships and the speed of moving them out of the port.

To minimize the storage cycle and to decrease the number of storage areas in the port since containers are considered small storage units.

To protect the freight from damage or theft.

Elements of Study:

First:

1. To perform a study concerning both the foreign trade structure and the national trade structure in order to identify types of commodities. This will help transport containers for distribution of commodities both nationally and internationally.

2. To survey the volumes of packages of different exported commodities and to study the necessary changes in the shape and volume of packages to optimize the use of available space in the containers, and to evaluate the economics of cost.

Second:

1. To survey the present capabilities in the ports, and to suggest requirements for full container operations, which will be done in stages.

2. To plan for the following stages after arriving at the economic volume of container transport.

3. To study the capabilities of Egyptian trade fleet and the feasibility of the fleet to transport containers.

4. To study the future needs of ships, along with the necessary economic study, while devising a plan for each stage.

Third:

1. To survey the present capacity for the modes of transportation, such as railroad, highways, and river, and to identify the requirements of each mode to adapt the container system (in stages).

2. To study the centers of production in order to determine sites for loading, collecting and exchanging the containers. This will be done in coordination with all national modes of transportation.

3. To determine the needs of stations for loading and exchanging from any mechanical devices.

Fourth

1. To study the effect of using the container system on the national economy and what the system requires in total investment resources beside the effect of using containers on the quantity and value of Egyptian imports and exports in the future. Cost of transportation and insurance, with benefit cost analysis will also be studied.

Fifth:

1. To study the ownership of containers and what is being done in foreign countries and to adopt the most suitable style for Egypt in the areas of exchange, commodity handling, and documentation.

2. To check the possibility of manufacturing containers locally in the event that the volume of demand requires it.

Sixth

1. To study customs procedures in order to transfer the procedure into a helping factor for moving the containers; i.e., within the port, within the customs areas, and within the country.

R.A.: Alexandria Port Authority and Faculty of Engineering Alexandria University.

Date and P.O.P.: May 1974 - 24 months

Budget: LE 43,000

Balance: LE 11,228

Important Results:

1. A survey on both national and foreign trade structures in order to identify types of commodities. This will, in turn, identify the priorities when adopting the container system in distributing the commodities both inside and outside the country.

2. A survey of the present capabilities of different Egyptian ports with planning for the following stages. An evaluation of the Egyptian fleet and the possibility of using the fleet's ship in carrying containers and a study of future requirements and devising a plan for each future stage.

3. A survey of present capabilities of different transportation modes to carry the containers, and to determine requirements to adopt the system. To study the production centers in order to determine the location of the stations used for loading, and exchanging containers.

To determine the needs of those stations.

- To study the effect of using containers on the national economy, the investment capital resources, and cost with economic analysis.

4. To study ownership of containers and systems adopted in different foreign countries and the possible suitable system for Egypt concerning exchange, commodity handling, and paper documents for containers.

5. To study customs procedures and to transfer them into a helping factor in moving the continers in ports, custom clearance areas, and in their general paths in the country.

B.A.: Alexandria Port Authority - all ports in Egypt - Marine and river transportation sector.

6/2 To study the relation between embankments and water structure in determining types and speeds of river passenger transport units and river freight transport units; and the effect of that on the river transport system.

Goal:

To study the phenomena of erosion along navigational channels due to the operation of river transporting units, to correlate between the speed of the erosion in different areas and to evaluate the effect on both the policy and economics of river transport system.

Elements of Study:

- To survey the types, properties, dimensions, and age of water transport ships.
- To survey the navigational channels and to identify the erosion area along the channels with types of soil and reasons for erosion.
- To study the traffic density in the navigational channels and areas of congestion with reasons for congestion.

- To study the obstacles in the channels, the navigational openings in water structures, and the average commercial speed.
- To evaluate the efficiency of working personnel
- To calculate the water speed and water pressure on the sides of the channels in different sections and to study the effect of the shape of the front of the ship.
- To study the reason for speedy erosion due to the increased speed of water along the sides.
- To study the feasibility of standardizing the dimensions of the river units and that of the navigational openings (in the water structures)
- To analyze the data and to suggest the solutions and their effect on transportation economics.

R.A.: Faculty of Engineering - Alexandria University

Date and P.O.P.: October 1978 - 24 months

Budget: LE 95,500 local - LE 4,000 foreign

Balance: LE 44,500 local

Important Results:

1. River transport units owned by the two public sector companies were surveyed from official records. The data will be compared to the actual conditions along with units owned by the private sector.
2. The navigational channels are being surveyed to determine difficult navigational areas. In regard to reasons for erosion, only the Nubaria Canal will be studied because of its commercial importance and also because it is a new canal best suitable for research work.
3. The study about the commercial speed in the Nubaria Canal, and the study about navigational hours alternatives and their effect were performed.
4. A questionnaire sheet was designed in order to evaluate the structure and the efficiency of workers in that field. The sheet is being revised now in order to be able to use it in the computer.

5. A theoretical study was performed on the movement of waves, the water speed along the sides of the channel and their effect on the rate of erosion. To survey all navigational openings in the waters (locks - bridges) in order to determine the lengths of these openings (since the width is fixed according to a Ministerial decree and the draft is a function of the depth of water). A hydrodynamic model is now being constructed, together with a structural design for the boats. It was agreed to have one boat 50 meters long and another boat 35-37 meters long in order to be able to have combinations of dimensions, some of which would suit the navigational channel.

B.A.: River and water transportation sector.

6/3 Equivalent units for different traffic formations.

Goal: To determine different types of vehicles that constitute the traffic patterns, and to perform a study to determine the effect of each vehicle on traffic characteristics under operating conditions. To construct a test section (of a road) on which different vehicles will run in order to determine the equivalent units of traffic formations.

Elements of Study:

1. To collect and analyse vehicle data
2. To collect traffic data
   - To choose sites for field research
   - To collect basic traffic data at the chosen sites under different weather conditions.
3. To perform a field study to record the effect different vehicles have on traffic flow.
   - To survey capacities of the traffic department, road department and transportation department.

- To study the program for recording data (including buying imported measuring equipment - both mecanical and photography).
- To prepare the sites for recording the data
- To collect data under different weather conditions.
- To analyze the data and to evaluate the effect of each type of vehicle on the traffic flow.

4. To choose vehicles on the test road
   - To evaluate capabilities of the traffic, transportation, and road departments.
   - To study the program for the tests
   - To collect the data
   - To analyze the data and to evaluate the effect some data has on other data
5. To determine the equivalent numbers
   - To evaluate methods used in foreign countries in the traffic, transportation and road departments.
   - To evaluate previous studies
   - To determine the equivalent numbers
   - To discuss results and to present necessary recommendations.
   - To present the final report

Research Agency: Faculty of Engineering - Al Azhar University

Date and P.O.P.: December 1979 - 36 months

Budget: LE 75,000 local and LE 21,264 foreign

Balance: LE 30,000 local

Important results:

- To determine the properties of the Egyptian highway network and to categorize them - and intersections - inside and outside the cities.

- To identify all types of vehicles that operate on the roads, and to determine the properties of each type, whether moving on tracks, such as the tramways and metro, or driven by motor, or vehicles that are pushed manually or drawn by animals. Vehicle types also include bicycles and all types of slow transporation means.
- To collect traffic data from the traffic departments and any other agencies working in the field, in order to identify both rush hour times and hours of minimum traffic during the day, week, month and year.
- To contact different international research centers to collect all relevant studies in the area and to compare them with the conditions in the Egyptian environment.
- To determine all the factors that affect the calculations of the equivalent numbers, whether their effect is direct of indirect, and to identify ways of measuring the factors.
- To choose the field sites where different recordings will be taken
- To analyse the data and to check its effect on other data.
- To derive results and determine the required equivalent units.
- The procedures for buying necessary equipment are currently underway in the academy.

B.A.: Road transport sector

6/4 Analysis of traffic accidents on roads (inside and outside the cities)

Goal:

To formulate regulations which guarantee obtaining correct data on road accidents.

To determine the reasons for accidents and to formulate rules to limit (or abolish) them.

To identify the effect accidents have on the national economy and the losses inflicted upon economic development.

To determine rates and patterns of direct and indirect costs resulting from accidents, whether for personnel or cars.

To determine ways to modify laws in order to limit road accidents.

Elements of Study:

- To survey the accidents that take place during the research period in the chosen sites, and to collect the necesary data from involved personnel as to a time of the accident, and reasons that caused it.
- To determine the type and palce of the accident (the kilometrage) in order to identify the black spots where repeated accidents happen. This will help determine the relation between reasons for accidents on one hand, and road design, road condition, guiding signals, warning signals, and traffic signs on the road on the other hand.
- To survey reasons for the accidents, and to determine the size of the problem, whether human, car, or road, and factors that promoted the accident and its results.
- To choose some of those black spots and to perform the analyses necessary to change conditions in order to promote safety.
- To choose sites where experiments will be performed concerning the suggested modifications.
- To evaluate the effectiveness of those solutions during the third phase of the research.
- To study repetition of accidents on a particular point on the road or repetition of the accidents in a particular time span.
- To determine number of kilometer - accidents in a particular period of time.
- To survey volume of traffic and its components at the black spot areas.
- To determine the current speed of vehicles in the black spot areas.

Research Agency: General Traffic Department

Date and P.O.P.: October 1981 - 42 months

Budget: LE 115,000 local - LE 35,000 foreign

Balance: LE 93,000

Important Results:

- The first stage of the project aims at designing the model report sheet to be filled in by the police at the site of an accident. Data and information will be recorded on that sheet which will help the researcher analyze the reasons for the accident.
- The transportation research laboratory in the United Kingdom has participated in training groups of police officers and soldiers in filling in the data on the model sheet. Some experiments were performed on the following model sheets:
  - A sheet prepared by the criminal and juvenile research unit in the National Center for criminal and social research.
  - A model sheet labeled traffic accident, designed by the academy of scientific research.
  - A model sheet TRRL which is filled in with drawings and symbols.
  - A model sheet TRRL which is to be filled in with writing.

The experiments performed with those sheets were done in order to arrive at the best design for collecting data and to leave no room for guessing. This will make it easy to fill in the model sheet accurately and to transfer information to the computer.

Two additional model sheets were designed (a combination of the four models). One model is for illustrations and the other is for writing.

According to the design of the two models it was necessary to check the ability of the policeman to both understand and accept the sheets. Therefore, some field experiments were performed on the Cairo-Alexandria agricultural road; the Cairo-Alexandria desert road; and the Cairo-Ismaila desert road; followed by interviews with participants as to the clarity of the sheet and the ease of filling in the data at the sites of accidents. In light of the previous results, a draft of the suggested model (using both writing and illustrations) was prepared. Further, some field experiments were performed on the draft model.

- The research committee prepared a sheet to be filled by the engineer - when he moves to the site of the accident - in case of human injuries or deaths to report the technical conditions of the cars involved.
- Two branch committees were formed. The assignment of the first committee was to analyse a traffic fatality in a scientific manner suitable to local conditions, and which can be applied to all parts of the country. In addition, the committee designed a model sheet to be filled in by the doctor in cases of road accidents. The second branch committee will be concerned with estimating the economic damage resulting from the accident. In addition, the second committee designed a model sheet for economic evaluation which included all the details. Review of the sheets is currently underway.

B.A.: General traffic department - raod and bridges authority - the nation, and the citizen - Cairo and Giza Governorates

6/5 Stabilization of dirt roads.

Goal: To study different methods for the stabilization of dirt roads, and to determine the most suitable ones for local application. This aims at having the raods accessible during the year, and to decrease costs of maintenance of the road and cost of operation of cars using those roads.

Elements of Study:

- To survey research done for soil stablization both nationally and internationally.
- To collect all necessary data concerning different dirt roads in Egypt.
- To evaluate the collected data and research.
- To determine the most suitable ways for both stabilizing and maintaining dirt roads.
- To perform lab tests to identify the suitable methods using local resources.
- To perform an analytical study to evaluate different methods of stabilization.
- To construct different test sections. One test section will be in the Northern Delta (in either Behira Governorate or Kafr El Sheikh Governorate - an area known for heavy rain) 3 to 5 kilometers long. Another test section will be in the south (either Menya or Assuit - known to be a dry area). The test section will also be 3 to 5 kilometers long.
- To discuss and evaluate the results, and to present recommendations.
- To write the final report.

R.A.: General road and bridges authority in the Ministry of Transportation.

Date and P.O.P.: September 1981 - 36 months

Budget: LE 90,000 local - LE 3,000 foreign

Balance: LE 67,500

Important Results:

- Some of the research work done and articles published in the past years were collected from periodicals, theses, and national and international reports. Some engineers and researchers began preparing reports about dirt road stablization using lime and cement. The types of soil suited to stabilization with these two types of materials were determined and the percentages of those materials which are needed to be added to the soil were also determined. A collection of research concerned with stabilization using asphalt and other materials is currently underway.
- The collection of available data concerning dirt roads in Egypt has begun. All previous lab test results from the past years were collected. Some new tests were performed to determine soil types in both upper and lower Egypt, with the aim of plotting the soil types on the map.
- A sample of soil from one of the dirt roads in Kafr El Sheikh Governorate (on the Moharam Sidi Salem road - 11 km long) was retrieved. The soil properties were identified. Lab tests will be performed later on the sample.

B.A.: Road and bridges authority - Road transportation sector
All the sectors in the country.

7. Specific Council for Construction and Housing

7/1 Effect of the degree of treatment for sewer water on the physical and chemical properties of the agricultural soil, and on different types of crops.

Goal:

To use water in land reclamation programs for desert areas near to treatment plants, and to determine the agricultural coefficients such as the most suitable type of treated water, the best method of irrigation using sewer water, and the most suitable crops to be irrigated with sewer water. It should be noted that all health hazards should be eliminated in the using of sewer water.

Elements of study:

- The degree of treatment of sewer water in order to meet the requirements of both the soil and the crops.
- The degree of pollution in the underground reservoir.
- The effect that sewer water has after treatment on the soil and on agricultural production.
- The best methods of draining this water after use and the effect on neighboring land.
- To choose and to design the best treatment method which is suited for neighboring areas.

R.A. : General authority for sewers and sanitary drainage.

Date and P.O.P.: June 1,1979 - 36 months

Budget:L.E. 251,000 local & L.E. 9,000 foreign.

Balance: L.E. 141,000 local & L.E. 9,000 foreign .

Important results :

-Renewal of the filtering plant in Abu Rawash and furnishing of the tank assigned to the oxidizing pool.

- Studies were done on the areas where the project was carried out concerning the physical and chemical properties of the soil.

- Water coming in to Abu Rawash was analysed to determine its suitability to suggested biological treatment, and its suitability to irrigation (with regard to degree of salinity and heavy minerals included).
- Some areas were cultivated with raw water and the health hazards due to using raw (untreated) water were evaluated.

7/2 The limits of using cement mixed with iron slag (Karnak and Ferro cement types)

Goal:

To evaluate the behavior of both reinforced and plain concrete members in buildings where Karnak and Ferro cement types were used such as : load effects, resistance, deformation, cracking, and failure. Then, the coefficients of design can be determined in response to the different design theories.

Elemnts of study:

- Scientific collection of all research performed and the results obtained concerning the use of Ferro cement and the Karnak cement types in concrete.
- A preliminary lab study to determine the physical and chemical properties of local production of those two types of cement.
- A preliminary study ,in the lab, on the concrete mixes with: Karnak, Ferro, and ordinary Portland cement to determine the properties required by design theoties,and the conditions of execution for both plain and reinforced concrete.
- A lab study on structural members(beams, columns, and floors) with true physical dimensions. The members will include concrete mixtures of the three types of cement.

- To prepare suggestions for the basis for design and modifications to be introduced in both the design and execution procedures for concrete structures in Egypt.

R.A.: General Authority for Housing, Buildings and Urban Planning Research Center.

Date and P.O.P.: Oct 1, 1979 - 36 months

Budget: LE 51,390 local currency - LE 5,000 foreign

Balance: LE 29,434 local currency - LE 5,000 foreign

7/3 Feasibility of Central mixing of reinforced concrete

Goal:

To develop one of the basic steps in executing concrete structures and to evaluate the development, both technically and economically.

Elements of Study:

- To collect previous studies
- To study the investment plan on the national level in order to identify the volume of construction expected in the cities chosen to perform this study and therefore evaluate their needs for concrete. Sources , materials, energy, and water will be surveyed.
- To evaluate different mixing stations as to their capacities, compared to the operation requirements. This will help choose the most suitable type corresponding to: volume of production, resources, and conditions of operation.
- To study cost of concrete produced by conventional methods, compared to cost of production with the method used in this study.
- To evaluate the economic advantages that could be gained by centrally mixing concrete for the different zones.

Research Agency: General Authority for Housing, Building, and Urban Research Center

Date and P.O.P.: Sept 1, 1979 - 12 months

Budget: LE 21,000

7/4 Construction using pre-fabricated units, and its economics

Goal:

To determine the best method for pre-fabricated construction under local circumstances. This will be done by designing a mathematical model.

- To compare the cost of the pre-fabricated construction method with conventional methods.
- To study different factors which affect processes of: manufacturing, transporting, and executing in order to evaluate the suitable level of production.
- To evaluate the production efficiency of the factories.

Elements of Study:

First Stage:

- To survey methods of pre-fabricated construction in Egypt and in other countries, and to identify the important factors affecting the pre-fabricated construction method, in order to design a mathematical model.
- To survey all types of joints, and to survey all theoretical and applied research that was performed on joints.
- To design a program for the theoretical studies and laboratory experiments to be performed on joints (locally).

Second State:

- To analyze data collected in the first stage.
- To design the mathematical model in light of the data collected in the first stage, and to "calibrate" the mathematical model by some preliminary applications.

- To perform both theoretical studies and the lab experiments according to the program done in the first stage.

Third Stage:

- Applications on the mathematical model and to modify the model in light of updating the data.
- To continue with laboratory tests on joints.
- To formulate recommendations.

Research Agency: Faculty of Engineering, Ein Shams University

Date and P.O.P.: December 28, 1974 - 48 months

Budget: LE 91,934

Balance: LE 9,259

Important Results:

The Chairman of the research committee presented the second periodical report to the concerned department for evaluation. The report is in two parts.

Part I:

This includes the mathematical model for planning the construction procedure, and applications for using the model on one pre-fabricated construction stage for one factory in the Ministry of Housing.

Part II:

This includes the effect of horizontal forces in joints, and on pre-fab wall-bearing units.

7/5 Concrete reinforced with fibers and its use in housing projects in Egypt.

Goal:

To identify the best methods to produce concrete reinforced with fibers (which are distributed at random within the concrete), which suit local conditions.

To determine the basis and conditions that lead to using this type of concrete efficiently in housing projects (both technically and economically) and to make sure of the good performance of buildings constructed with this type of concrete.

Elements of Study:

- To collect all previous studies and research in this field, both national and international.
- To study properties and the behavior of available materials which include: reinforcing fibers, jointing materials, additives, and aggregates.
- To design the mix.
- To study the production of building units, and to evaluate their properties, behavior and economics.
- To evaluate the performance level of structural members.
- To evaluate the use of this type of concrete in housing.
- To perform field tests on experimental buildings that meet housing requirements.
- To prepare the final report, including results and recommendations.

Research Agency: Faculty of Engineering, Cairo University

Date and P.O.P.: Sept 1, 1979 - 36 months

Budget: LE 64,145 local currency - LE 9,000 foreign

Balance: LE 47,847 local

7/6 Effect of salts on the concrete in both the foundation and superstructure.

Goal: To use the results that will be obtained from both the experiments and theoretical studies in preparing concretes that are resistant to different salts, and to find solutions for repairing

structures that are subjected to salty media.

To put recommendations and precautions to be considered in the future in designing structures and foundation systems that are subject to the effect of salts.

Elements of Study:

- A survey of all studies (both theoretical and practical) in this field in Egypt and in other countries.
- To dig test wells to record different salt concentrations at different depths, in all parts of Egypt.
- To evaluate the effect of salts on the structures existing in salty surroundings.

Research Agency:	Faculty of Engineering, Alexandria University
Date and P.O.P.:	June 1, 1974 - 120 months
Budget:	LE 66,000 local - LE 20,000 foreign
Balance:	LE 20,957 local - LE 9,233 foreign

7/7 Architecture of desert areas, design of desert houses, and planning of desert communities.

Goal:

To study the determinate and coefficients that affect the architectural design in desert areas in order to obtain the basis of correct design for all housing elements. This will lead to both exploiting natural resources and developing the Sinai, which is an important national goal. In other words, the exploitation of natural resources in Sinai, including tourism and both agricultural and industrial development, should go hand in hand with the constructional development of the peninsula.

Elements of Study:

- A detailed study of the desert environment (physical - climatic-social - and economical).
- To survey the available resources of building materials.
- To identify the needs of families, in different income levels, for suitable living conditions.
- To develop suitable standards and patterns for a desert housing unit.
- To study construction methods, the specifications of available building materials, and the specifications of alternative materials (whether manufactured or developed).

Research Agency: Faculty of Engineering, Cairo University

Date and P.O.P.: August 1, 1982 - 24 months

Budget: LE 36,000

8. Specific Council for New Communities

There are no continuous projects.

9. Specific Council for research for management and economic sciences.

9/1 To evaluate local governing system applied in Egypt between 1960 - 1980.

Goal:

To evaluate the system and all its aspects during the past two decades in order to determin successes, achievements, and obstacles that met the system. This will lead to improving and strengthening the system to meet the national goal of decentralization within the framework of the political system of the Egyptian society.

Elements of study:

- To collect data and information.
- To develop a preliminary measure for evaluating the effeciency and the effectiveness of the local governing system.
- To perform a field test to identify points of strengths and points of weaknesses in the system.
- To analyze the present applied system in the past two decades according to measures previously developed.
- To suggest the necessary procedures and regulations that are needed.

Research Agency: Faculty of Economics and Political Sciences, Cairo University

Date and P.O.P.: June, 1981 - 18 months

Budget: LE 22,000

Balance: LE 11,000

9/2 Planning of labor force in Egypt.

Goal:

- To analyze the labor structure and to determine its capacity.
- To analyze the needs of the present labor structure and to determine the requirements.
- To determine the gap between supply and demand.
- To project and to analyse the population behavioral patterns until the year 2000.
- To analyze both the Education and Training structures and their conformity to needs.
- To survey the labor needed until the year 2000.
- To form an integrated model for labor planning in Egypt with a detailed example to be executed at different levels.

Elements of Study:

1. A detailed analysis of labor according to the vocational groups distributed over different economic sectors (government and public sector)

2. To analyze the different patterns of behavior of the population from the year 1980 until 2000.

3. To analyze both the educational and training structures in order to evaluate the different variables concerning education and training.

4. To survey the demand for labor force in the different economic sectors (government and public sector)

5. To develop the model

Research Agency: Central Agency for management and Organization

Important Results

The first stage of the research was completed, which was: collection of the scientific data on the development of the local governing system in Egypt since 1960. The data shows the rules - in the Egyptian constitution - of dividing the country into local units, the local authorities (their authorities), and the financing of local governing system.

A questionnaire sheet was designed whose questions will be answered in different governorates to collect the required data.

B.A.: Ministry of Local Governing - Universities

Date and P.O.P.: October 18, 1981 - 5 months

Budget: LE 9,000

Balance: LE 4,000

B.A.: Central Agency for Management and Organization, and all National Agencies.

9/3 Organizing the governmental structure

Goal:

- To put the basis for organizing the governmental structure and to abolish the problems it faces.
- To formulate the limitations according to which changes in the strucutre take place.
- To suggest an effective organization for the structure.
- To suggest general bases for the working system of the governmental structure.

Elements of Study:

1. To identify the principal features of the targets of the national general policy.
2. To thoroughly analyze units of the governmental structure concerning their goals, and functions in light of the historical development of the function of the government in successive time intervals, and the effect of the development on efficiency.
- To discuss and analyze both the activities and responsibilities of the governmental body and to determine points of weakness in the system and there reasons for them.
4. To determine the planning roles and the implementing roles of the different units of the government and the relation between them in light of the general policies decided.
5. To group the integrated activities and to determine the relations between them.
6. To suggest the suitable form for the government structure which can develop into a stable structure for the government.
7. To suggest responsibilities and organizational relations for different units of the government.
8. To suggest principal rules and general regulations to form a work system in different units of the government.

R.A.: Central Agency for Management and Organization

Date and P.O.P.: October 18, 1981 - 18 months

Budget: LE 9,000

Balance: LE 4,000

B.A.: Central agency for management and organization - All governmental units

9/4 Second stage of research planning for the labor force of police officers

Goal: The first stage aimed at analyzing the data (obtained from the books of the Ministry of the Interior) in order to identify the present status in the police sector with special emphasis on officers, and to identify the advantages and disadvantages of the present system of distributing officers and factors that control the distribution process. The first stage resulted in some results and recommendations which will participate in rationalizing decisions concerning police officers.

The second stage is concerned with field research which basically aims at:

* Identifying the actual needs of all security directorates and the different departments of the Ministry of the Interior.

* Planning and standardizing jobs concerned with officers.

* Designing a plan to determine the police officer's labor force including the standards according to which the number and level of preparation of police officers are chosen.

Elements of Study:

1. The planning aspect:

To evaluate the organizational strucutre of different departments of the Ministry of the Interior, and to determine the extent the structure in the department suits both the number of officers in the department and the duties expected to be carried out by that department. In addition

to that, the study will include determining the possibility of either expanding or shrinking the organization structures of those departments.

2. The personnel aspect:

A comprehensive survey will be done for officers in the ministry concerning their ranks, educational degrees, and the suitability of their educational background with the duties assigned to them.

3. The location aspect:

This includes surveying locations of all directorates, departments, and administrations of the Ministry of the Interior on the national level.

Research A: College of research and graduate studies in the Police Academy:

Date and P.O.P.: May 1981 - 20 months

Budget: LE 9,000

Important results: The first phase of the second stage was finished, which was concerned with the present status of the officers in the labor force.

B.A.: Ministry of the Interior.

10. Specific Council for Research for Social Sciences and Population

10/1 Illiteracy among the young as a social phenomenon and its relation to deviation of the young

Goal:

- To identify the volume of the problem in the past few years (1970-1975), and reasons behind it.
- To identify the alternative activities in different fields in which illiterate youths can participate, and whether these alternates permit a healthy social upbringing or a deviation of the young.

- To relate between deviation (among youths out of primary schools) and the deviation of society.

Elements of Study:

Age Group of the Research:

The research involves children in the age group (6-12) who were not able to enroll in primary schools. Their number reached almost 326,000 students annually between 1970-1975. A total of 1,180,000 children.

The geographic location of the research:

First: To collect statistical data on the national level, in order to identify the size of the problem between 1970 and 1975.

Second: To take a sample of children in Cairo and perform a comprehensive social study on them.

R.A.: National center for social and criminal research.

Date and P.O.P.: 1978 - 24 months

Budget: Le 10,000

Important results:

All necessary data was collected from different establishments. Cases studied were 3700 cases. The data collected was tabulated and analyzed statistically. Computer output included all simple repetitive tabulations and all compunded tables.

10/2 Social-economic development

Goal: To study the declared values of the country from the time of the revolution until the end of 1979, and to correlate between the values and examples of both social and economic development and to treat this subject within the framework of the events that the society has gone through during that period. These include political, social and economical events.

Elements of Study:

In light of the integrated look to the subject, four main dimensions can be recognized in dealing with this subject:

1. An analytical study for the valued adapted by the nation from the revolution until the end of 1979 and the conformity of the values with models of development. (A documented study)

2. Values which the leaders of public opinion believe should govern society (within their own opinion). This is an independent study

3. The extent of the conformity of values imposed by the country and those called for by leaders of public opinion on sone side, and the values directed to the masses through two of the most important agencies in the country on the other hand:

- Educational agency
- Information agency

4. Values currently prevailing in society and how these values are in line with development requirements. It should be noted that the analysis should be carried out through the following dimension:

- The cultural dimension (rural - urban)
- Social class
- Generation
- Sex
- Religion

According to this outline, the analysis should be carried out at different levels. Each level delivers the analysis to the next level, etc. until a clear idea about values - at all levels of society - is obtained. Both the degree of uniformity of values in different levels of society, and the conformity of values to models of development should be deduced.

Research Agency: National Center for Social and Criminal Research

Date and P.O.P.: May 1979 - 18 months

Budget: LE 15,000

10/3 Research on productive families and their role in raising levels of income.

Goal:

- To determine the role of "productive families" in raising the level of income and the extent of the benefit to the family from this project
- To survey available local resources which the families can exploit in their projects.
- To identify the current projects which need supporting and the type of support needed.
- To identify the current projects which added no return to the families and the reasons behind that.
- To determine the problems that face the project whether they are financial, resources, marketing, or training.
- To try solving the problems that face the project in order to help raise the income of the families.
- To develop the project according to the needs of the development plan and the available resources and capacities of the environment. The products will be marketed by marketing centers in different suburbs.

Elements of Study:

The main elements that the research will concentrate on:

- To review previous work and books published in the field.
- To perform a field preliminary study
- To perform a social survey on a randomly chosen sample or a regular sample in light of the preliminary study.
- Data collecting form.

Research Agency: Ministry of Social Affairs, The Deputy Minister for Research and Planning.

Date and P.O.P.: 1979 - 18 months

Budget: LE 7,000

Balance: LE 1,660

Important Results:

1. Following stages were finished:
   - The preliminary study
   - Designing the equipment
   - Testing the equipment and their modifications according to the test
2. Currently preparations are under way to collect the data

10/4 Industrial structure in Egypt during 1970 - 1977

Goal:

To retrieve detailed and statistical data on the industrial investment (volume - sources - distribution over different industrial sectors and over different industries), and the participation of both the public and private sectors in building the industry in Egypt in the seventies (1970-1977) and the weight of importance of participation of each, the extent of encouragement given to each of the sectors and evidence of the encouragement. Also, to collect data on foreign industries permitted in this country and their volume. The historical dimension of the research should be included, which means that the research should include the historical background of the industrialization in Egypt in previous times in order to perform a comparison on the development of the industrial structure in Egypt.

Elements of Study - concerning the study of the industrial skeleton in the seventies which will include the following:

First: To study and categorize types of industries

Second: To study production, income and investment in both public and private sectors

Third: To evaluate the volumes of public and private sectors

Fourth: To compare the industrial status during the seventies (1970-1977) with its status during former periods of time in order to show points of agreement and points of disagreement.

- To present results and recommendations concerning the evaluation of the industrial labor status and the laws organizing labor. It will include the following:

First: The status of industrial labor

It includes data on all persons working in the industry (in different professions and employment).

Second: Modifying labor laws;

This surveys the new labor laws issued during that period.

Third: A comparison between labor status in the seventies and the status in previous periods of time during the industrial development periods in Egypt. Also, a survey of the industrial problems and the effect of laws (both labor and industrial) to overcome the problems.

Research Agency: National Center for Social and Criminal Research

Date and P.O.P.: 1978 - 24 months

Budget: LE 10,000

Important Results:

The final report was finished and is being printed now.

10/5 The role of police in stages of national struggle

Goal:

The importance of this research will show from the results obtained.

Scientifically:

To respond to the growing national interest in uncovering the true history of the role of police in the national struggle and to record that history as to the roles carred by the police as part of the police employment assignments in helping the national struggle implement the national targets.

Spritually:

To promote the feelings of sacrifice in the body of police, when the policemen recognize the sacrifices of the previous generations of police and when they feel both the appreciation and recognition of their sacrifice.

Information:

To stress the heroic actions of police against the current illustrations of some police actions (as done in movies and plays) towards the national struggle.

Nationally:

To express the feeling of gratitude to our ancestors who participated in the national struggle under the flag of the police.

Elements of study:

The research can be divided into some steps:

1. Collection of the facts from available sources

a. Main sources which include: monuments, written documents, messages, memoires, records, and bulletins issued by official authorities.

b. Secondary sources which transfer the information from the main sources.

2. To analyze the sources and check them in order to evaluate their information whether positively or negatively.

3. To categorize the facts, analyze them and relate between them. The categorization will be according to either place or time (or both) in order to help uncover the phenomena under study.

4. To present the results.

Research Agency: The Police Academy

Date and P.O.P.: October 1979 - 24 month

Budget: LE 15,000 (5,000 from the Ministry of the Interior and 10,000 from the Academy of Scientific Research and Technology)

Important Results:

The research group collected 106 documents for different stages starting from the Orabi revolution until the present time. The documents are placed in the library.

11. Specific Councils for Research on Basic Sciences

11/1 Micro-analysis for drugs from plant sources (that are frequently administered)

Goal:

To find a quick and accurate way to identify products of some drugs, such as narcotics, cocaine, marijuana, since some of these drugs have the same effect (even in small quantities) of causing residue of extremely small quantities in the urine.

Research Agency: Faculty of Pharmacy - Assuit University

Date and P.O.P.: 1979 - 24 month

Budget: LE 3,500 foreign currency

Balance: LE 2,241

11/2 Biochemical, immuniological, and pharmacological studies on poisons of Egyptian scorpions.

Goal: To extract some components of the scorpion's poison which have a poisonous effect on Bilharzia parasites and eggs.

Elements of Study:

1. To study the effect of the scorpion's poison on the blood gas, blood fats, and sperms.
2. To study the effect of scorpion's poison on enzymes of some cells.

Research Agency: Faculty of Medicine - Ein Shams University

Date and P.O.P.: July 1979 - 36 months

Budget: LE 21,000

Balance: LE 7,000

Important Results:

1. A component was extracted from the scorpion's poison which can kill the Bilharzia cercariae.
2. The scorpion poison causes changes in the blood fats, liver and some enzymes.
3. A vaccine was produced against the poison
4. The effect of the poison on liver enzymes and the blood was studied which reflects the effect on mankind.

11/3 Water plants and extraction of Caorine

Goal: To collect some of the water plants - from which caorine is extracted - from water channels. The caorine material can be exported in addition to being used locally in some agricultural experiment stations and in the process of land reclamation. The caorine has a helping effect on plant growth. This project, therefore, has two aims. They are clearing the water channels, and extracting caorine.

Research Agency: Faculty of Pharmacology - Assuit University

Date and P.O.P.: May 21, 1980 - 12 months

Budget: LE 8,000 foreign

Balance: LE 5,575 foreign

11/4 Laser Research and Applications

Goal: To support the laser research unit in the National Calibration Institute, to manufacture filtering units and light cells, to manufacture mirrors from laser instruments, and to produce surfaces for minimizing reflections in the developed spectrum and the infra-red zones.

Elements of Study:

To prepare the holographic laboratory and to operate it in manufacturing high reflecting mirrors and some light filtering items in the visible zone of the spectrum.

Research Agency: National Calibration Institute

Date and P.O.P.: May 22, 1979 - 60 months

Budget: LE 63,000 foreign

Balance: LE 16,351 foreign

11/5 To construct the laboragory for laser beam (and its application)

Goal:

To produce the laser beam and to produce equipment for the laser beam with different characteristics. To study different reactions of the laser beam in order to determine the best conditions for grouping the beams. Therefore, the laboratory would develop into a large beam manufacturing center which is necessary for use in medicine, industry, technology, communications research center, and astronomical centers.

Elements of Study:

To study the effect of laser beam on:

a. Solid materials, and the effect on surfaces and conductors as razor beam detectors.

b. Electric vacuum resulting in gases

This will serve industrial applications of laser beams, the light study of transparent material, use of polymetric materials in safety and medical applications of biological materials.

Research Agency: Faculty of Science - Cairo, University

Date and P.O.P.: March 8, 1981 - 72 months

Budget: LE 12,000 local and LE 71,400 foreign

Balance: LE 58,693 foreign

Important Results:

- A nitrogen laser set was designed to obtain laser beams in the ultra violet range up to the red range.

A flouride hydrogen laser set was designed to obtain laser beams with different wave lengths which increases fields of applications.

11/6 A project to manufacture a source for laser beams with pulses that range between 1 and 10 megawatts.

Goal: To use the laser pulse in studying its effect on different bodies, the chemistry of the laser and materials used to produce it.

Elements of Study:

To cooperate with Essex University in constructing a laser set with laser pulses up to 10 megawatts in time equals x 1 x 10^{-9} second.

Research Center: Research and Graduate Studies Center - Alexandria University.

Date and P.O.P.: Sept 24, 1978 - 36 months

Budget: LE 11,410 local - LE 47,000 foreign

Balance: LE 5,727 local - LE 15,402 foreign

Important Results:

Local gases (carbon dioxide - Nitrogen) were used in the Carbon dioxide laser set. Results showed that local gases can be used, although they need to be purified. These gases were tested on two different laser beam sets.

- The parts of the Hydrogen flouride laser set were grouped and tested.

11/7 Measurement of low temperatures

Goal:

To calibrate thermometers for measuring low temperatures, and to perform the research necessary which is concerned with measuring low temperatures.

Elements of Study:

1. To prepare a laboratory for measuring low temperatures and to furnish the laboratory with the necessary equipment and instruments.
2. Calibration of thermometers for measuring temperatures betwen 0° and -190° Centrigrade.

Research Agency: National Institute for Measurement and Calibration

Date and P.O.P.: August 13, 1978 - 36 months

Budget: LE 11,947 local - LE 84,673 foreign

Balance: LE 5,000 local - LE 12,675 foreign

Important Results:

All equipment brought to the unit was put into operation. The unit is therefore able to calibrate any thermometer down to -40° Centigrade (compared to the platinum thermometer which is calibrated according to the international scale) with an accuracy of 0.005 Calvin. Agreement was reached between the thermal measurement unit in the institute and the

thermal lab in the National Bureau of Standards (NBS) in the United States on a research project entitled, "Study on establishing portable calibrated points to measure temperatures which will be used for both technological and medical functions.

11/8 To construct laboratories for the production and study of "one element" crystals.

Goal: To produce materials with high degree of purity, to produce one element crystals of different materials, and to train workers in this field.

Elements of Study

1. To produce highly purified materials
2. To shape the materials according to the purpose they will be used in, such as crystals or membranes.
3. To categorize crystals (or materials) according to their physical properties, after performing some measurements on them.

Research Agency:	Faculty of Science - Cairo University
Date and P.O.P.:	August 13, 1978 - 36 months
Budget:	LE 16,300 local - LE 105,556 foreign
Balance:	LE 6,500 local - LE 47,720 foreign

Important results:

- A lab was prepared to produce crystals using Zofralisky's method
- Three cabinets with internal lighting are ready for showing crystals.
- The following necessary equipment and laboratory instruments were received: high heating elements - instruments to measure temperatures- instruments to control temperatures - materials and equipment necessary to manufacture furnaces - set for crystals development (from the molten materials) - crystal cutting machine - crystal polishing machine - purification instrument.

11/9 Manufacturing semi-conductors and using them in the exploitation of solar energy.

Goal:

To produce some semi-conductor materials in the shape of one element crystal or in sheets of certain thickness and properties with the goal of using them as light cells, and to increase their efficiency.

Elements of Study:

1. To compound materials suitable for light cells and to evaluate their properties in order to choose the most suitable.
2. To test the light cells- that prooved fit in the laboratory - under solar energy.

Research Agency: National Research Center

Date and P.O.P.: November 1978 - 36 months

Budget: LE 16,000 local and LE 46,200 foreign

Balance: LE 7,777 local and LE 25,744 foreign

Important Results:

1. The set to evaporate matters in vacuum (10^{-5}) was assembled and operated.
2. Instruements to measure the electric current properties with change of the voltage, were assembled.
3. Instruments to measure the electric conductivity and the Hall property at room temperature were assembled.
4. A glass instrument, to measure the properties of the cell under low atmospheric pressure and low temperatures (-196° Centigrade) was designed and manufactured.

The research committe produced solare cells of type Catelod, studied some of their properties, and determined the basic factor affecting their efficiency.

11/10 To study the dynamics of chemical reaction in organic crystals

Goal: To determine data on the nature of the catalytic agents in the chemical, physical and formation reactions of crystals. Determining the mechanism of the process will help identify the effectiveness of organic crystals which represent most of the medical products.

Elements of Study:

- To use Raman's spectrum method which gives information about the oscillations of photons in crystals.
- To use hexagonal phosphor for microwave
- To use the flourescent microscope equipped for spectrum measurements.

Research Agency: Faculty of Science - Tanta University

Date and P.O.P.: Dec 31, 1978 - 24 months

Budget: LE 35,800

Balance: LE 18,000

11/11 To study the earthquake activities and to determine the seismic factor of safety, and to draw a map for Egypt showing the distribution of the factor of safety.

Goal: To collect the available data on earthquakes that took place in Egypt and to list them in order of the time of their duration. To determine the "quiet" zones and the "active" zones and to calculate the seismic factor for them in order to be able to choose sites for different industrial projects. To determine the tectonic earthquate activities in Egypt, which is part of the international project for studying the dynamic nature of the earth, and to determine the earthquake cycle in Egypt for the quake activity.

Elements of Study:

1. To collect all available data on earthquakes that have taken place in the area between longitude lines 20 - 40 East and latitudes 10 - 35 North, and to list them according to the duration time of the quake after identifying their centers, intensity, and their effects.

2. To draw a map indicating the horizontal distribution of the earthquakes and to draw sections in different directions to show the vertical distribution of the centers of the earthquakes.

3. To study the distribution of the earthquakes during the time in order to determine periods of activities and frequency of occurrence.

4. To study the relation between the earthquakes and their intensity. in order to identify the frequency of occurence of earthquakes with a particular intensity during a particular period of time.

5. To draw a map showing the distribution of the quakes and their intensity.

6. To divide the mentioned area into seismic zones according to both the type of earthquakes and how they happen, and to study the tectonic activities in those zones.

7. To calculate the acceleration of the earthquake waves and to determine the seismic factor of safety.

8. To study the previous earthquakes and the phenomena of lighter tremors following and preceding the heavy earthquakes.

9. To study how to counter the earthquake and tectonic activities by adapting the different geophysical phenomena.

Research Agency: Astronomical and Geophysical Institute in Helwan.

Date and P.O.P.: October 18, 1981 - 36 months

Budget: LE 30,000

Balance: LE 20,000

11/12 To study the earthquake activities around the High Dam Lake and the possibility of both avoiding them and protecting the dam from them.

Goal:

To study the sequence of earthquakes occurring as a result of filling in the High Dam Lake in order to identify: The increase in number and their destructive power, to determine the relation between the frequency of earthquakes occurring and the amount of water in the lake, and to check the possibility of discharging some water in the right time in order to avoid earthquakes.

Elements of Study:

1. To study the seismic interference around the High Dam Lake and to determine the level of interference and to try to aovid this interference by using the suitable technical instruments.
2. To perform a complete surveying around the High Dam Lake (using Egyptian instruments).
3. To analzye the data on earthquakes, which will be recorded in the second stage, and to identify how the quakes happen, their intensity and the rate of increase in frequency.
4. Permanent earthquake detection stations will be constructed to record the activities in the area with the feasibility of decreasing the frequency by discharging some of the water from the lake.

Research Agency: Astronomical and geophysical institute in Helwan

Date and P.O.P.: 1981 - 12 months

Budget: LE 10,000

Important Results:

Some preliminary measurements for what is known as seismic interference in the area was recorded. Also, some of the field instruments needed for this study were manufactured.

11/13

A study about higher education in Egypt and its relation to the labor market.

Goal:

A study on this type usually uncovers many factors behind many problems that face students, graduates, employers, and responsible personnel. The study may lead to formulating a new policy with a much clearer program to face the problems of: higher education, its students and its graduates.

Elements of Study:

1. To identify the geographical, historical, economical, population and social bases for the Egyptian society.
2. To evaluate the educational system in Egypt, which includes collecting the data concerning education in general and higher education in particular.
3. To evaluate labor connected with education in general and labor connected with higher education (and university education) in particular and to review reports prepared in that area and the volume of labor, the distribution, and different directions of labor.

Research Agency: Secretary to the Higher Council of Universities

Date and P.O.P.: May 1978 - 19 months

Budget: LE 20,000

Important Results:

The report concerning the geographical, historical, economical population and social bases of the Egyptian society was prepared and sent to the International Institute for Educational Planning in Paris.

The committee made a great effort to obtain the maximum number of questionnaire sheets and answers. The committee received 2273 sheets (out of 2675) that were sent to college students - an 85% response The number of questionnaire sheets received from graduates who are working was 1966 out of a total of 2810 sheets sent to universities and other authorities - a 70% response.

The number of questionnaires sent to employers was 805, of which 510 responded - 63%.

The results are presently being drawn and evaluated.

Chapter Three

Main Activities of the Specific Councils

The specific councils will perform some activities which will be executed in the process of implementing the national projects assigned to the councils. These activities will enable scientists and application personnel to benefit greatly from the results. These activities include: documenting the information; holding symposiums and conventions; preparing bulletins; training employees with the affairs of the council . . . . and many other activities to be carried out by the council.

Also included such a framework is the financing responsibility for activities connected with the universities, ministries, and local governing bodies, especially in the area of village development.

The following is a summary of some of the symposiums and conventions suggested.

Resources and Production:

1. Food and Industry

1/1 Cattle:

* A symposium on the problems of Egyptian buffalo (LE 5,000)
* A symposium on animal feeding . . .
  Problems and future under Egyptian conditions (LE 5,000)
* A symposium on diseases of newborn baby animals (LE 5,000)
* A symposium on blood parasites and their effect on imported cows (LE 5,000)
* A symposium on low fertility and the use of artificial insemination (LE 5,000)

1/2 Sheep

* Scientific symposiums about treating different parasitic diseases in sheep and goats in Egypt (LE 5,000)

1/3 Poultry

* A symposium on the problems of the poultry industry in Egypt (LE 5,000)

1/4 Fish

* 1983 Convention on fish wealth (LE 10,000)
* A symposium on fish farming 1983 (LE 2,000)
* To survey both the current research and the finished research in the area of fish wealth on the level of all national agencies 1983-1984 (LE 20,000)
* To perform some studies on some chosen subjects.
  - To rationalize the activities of labor force working in the area of fish 1983 (LE 5,000)
  - To organize fishing areas in Egypt 1984 (LE 5,000)
  - To study laws that protect the fishing areas (both the old and suggested laws) and environmental laws . . . etc. 1983 (LE 5,000)
  - To evaluate the role of fish co-ops (both for production and consumption) in developing the fishing wealth 1983 (LE 20,000).
  - To prepare a printed booklet on Egyptian marine environment and its wealth (1983-1985) (LE 15,000)

2. Industry

Some debates and conventions will be held. Experts will be invited to them from Egypt and from abroad to discuss the suggested projects in the five year plan, and to evaluate the finished projects. Symposiums will be held at the rate of one for each project. A total of approximately 25 symposiums will be held during the coming three years (LE 25,000).

3. Energy

3/1 Sumposium on rationalizing energy consumption in transportation

This symposium was held on November 6, & 7, 1982 in cooperation with the specific council for transportation and communication.

3/2 Debate on rationalization of electrical energy consumption.

A preliminary meeting was held between Engineer Mohamed Kamal Hamed - Chairman of the energy department and the heads of concerned electrical authorities to prepare for the debate. (Budget not yet determined.)

3/3 Debate for rationalizing energy consumption for home use.

It was decided to hold this debate in order to limit the increasing consumption of energy for different household uses. (Budget not yet determined.)

Mineral Wealths

- Symposium on the fields covered in the geological map of Egypt.

It was decided to hold this symposium to evaluate studies that were completed in the different mapping projects, i.e., gravitation, subsurface formations, magnetic and atmospheric radiation. (Budget not yet determined.)

Services:

4. Health and Medicine

1. A study session on "teaching the basic medical education in Arabic and its effect on the level of education and medical research in Egypt". The session will be for a few days in order to evaluate all aspects of Arabization, possibility of its success, and the results expected on the level of education, the ability of graduates, and the capacity of medical research.

This will be held in cooperation with faculties of medicine, the Academy, and the Arabic language comples. 1983 (Budget LE 5,000).

2. Debate on nursing and midwives (early 1983).

3. Debate on human labor in the rural health units (late 1983).

4. Symposium on medical secretarial work and medical records. (early 1984).

5. Debate on technical support personnel (late 1984).

6. Debate on emergency labor forces (late 1985).

7. Symposium on hospital management (late 1985).

(All budgets have not yet been determined.)

5. Environment

1. A symposium on water pollution in the Red Sea (Feb 1983). The following dignitaries will be invited to the symposium

- Deputy Prime Minister for Production and the Minister of Petroleum
- President of the board of directors of the Suez Canal Authority
- Minister of Cabinet Affairs and the State Minister of Management development.
- Minister of Tourism and Civil Aviation.

<u>Infrastructure</u>

6. Transportation and Communications

. Inland transportation

- A symposium on connecting the Sinai with the main land through different modes of transportation (LE 5,000), early 1983.
- A debate on freight transport, both in the present and in the future (LE 4,000). (Tentative arrangement is to have the debate in the second quarter of 1983.)

- A debate on storage and its relation to transportation (LE 4,000).
- A debate on transportation within the cities (LE 4,000).
- A debate on the underground metro (LE 4,000).

. Communications

- A symposium on modern methods of digital communications (LE 4,000).
- A symposium on electronic central exchanges with time intervals (LE 4,000).
- A symposium on modern methods for light communication (LE 4,000).
- A symposium on modern applications of microwaves in communications (LE 4,000).
- A symposium on modern methods of communication via satellites (LE 4,000).

. International Transport

- Five symposiums will be held during the five years (one each year) (LE 20,000).

7. Construction and Housing

No debates

8. New Communities

No debates.

<u>Social and Economic Development</u>

9. Management and Economics

No debates.

10. Social Affairs and Population

. Area of law

* A debate on social justice in the national policies of education and health (LE 2,000).

* A debate on legal assistance for the poor (LE 2,000).

* A debate on law consciousness among the people (LE 2,000)

Conventions to be held concerning the following subjects:

* The rights of the poor in theory and in social practice (LE 5,000 - late 1983).

* The coordination and integration in the area of social legislation (LE 3,000 - 1984).

. Study Sessions LE 4,000

This suggests organizing some training sessions for personnel working in the legal field. This is to begin in the third year of the plan.

. In the area of population (LE 20,000).

It is suggested that five conventions beheld during the five years.

. In the area of education and psychology

* A symposium on rationalization and planning of educational and psychological research in Egypt (LE 35,000).

* Attending conventions - to be held outside the country - relating to the plan and visits to some foreign nations (LE 125,000).

. In the area of development and social affairs:

* Training sessions (LE 60,000)

30 sessions within the coming five years in the following topics:

- Planning for social research
- Social research courses (curricula)
- Forecast
- Social Statistics
- Use of the computer
- Implementation of research results.

. Local conventions

The following subjects will be studied:

- Social research in Egypt
- Planning for social research in Egypt
- Use of research results and findings in Egypt
- Social future in Egypt
- Concerned agencies with social research in Egypt
- Courses of social research in Egypt

. International visits LE 60,000.

20 international visits which aim at getting acquainted with similar programs in European, American, African and Asian countries.

International conventions (LE 60,000

To participate in ten international conventions (with two representatives at each convention). This aims at the participation of the academy in social international conventions.

. Documentation LE 40,000

To form a social documentation center.

Basic Sciences

11. Basic sciences

Associated helping activities which include: information, scientific publishing, holding conventions and symposiums, and preparing a bibliography in the area of the environmental - chemical - geological - mathematical - and biological sciences. (Estimated budget - LE 150,000).

Chapter Four

Financing

Table 1

Total Estimated Budget For New and Continuous Projects (Five Year Plan)

in L.E.

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
New Projects	46,785,049	18,303,695	12,446,676	8,052,276	4,821,576	3,160,826
Continuous Projects	4,599,209	3,425,934	849,616	284,835	22,354	16,470
Conventions and Symposioms and other activities (10% of total Budgets for New and Continuous Projects)	5,138,426	2,172,963	1,329,629	833,711	484,393	317,730
Total	56,522,684	23,902,592	14,625,921	9,170,822	5,328,323	3,495,026

Table 2

Estimated Budget For New Projects In The Five Year Plan

in L.E.

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Resources and Production	19,583,405	7,562,801	4,868,176	3,470,026	2,122,076	1,560,326
Services	12,390,000	5,593,250	2,936,500	1,953,250	1,283,500	623,500
Infrastructure	11,070,000	3,987,000	3,744,000	2,027,000	861,000	451,000
Social and Economic Development	2,137,644	532,644	505,000	405,000	365,000	330,000
Basic Sciences	1,604,000	509,000	428,000	227,000	220,000	220,000
Total *	46,785,049	18,184,695	12,481,676	8,082,276	4,851,576	3,184,826

*Translator's note: Total should be the same as the corresponding numbers in line #1 in Table 1; however, it is typed as it appears in text.

Table 3/1 Food and Agriculture

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Plant production	1,785	459	419	369	269	269
Plant protection	889	326	196	191	146	30
Resources	893	198	199	198	149	148
Animal and Fish production	6,517	2,560	1,317	1,169	823	648
Economy and Society development	855	210	210	185	160	90
Diet and Agro-Industries	1,954	620	575	504	140	115
Total	12,893	4,373	2,916	2,616	1,687	1,300

Table 3/2 Industry

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Chemical Industries	239	186	53	-	-	-
Mettalic Industries	305	235	70	-	-	-
Engineering Industries	196	163	16	17	-	-
Food Industries	619	311	175	84	49	-
Spinning and Weaving Industries	100	32	35	33	-	-
Building materials and Ceramics Industries	45	32	13	-	-	-
Electric and Electronic Industries	20	14	6	-	-	-
Total	1,524	973	368	134	49	-

Table 3/3 Energy

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Petroleum	2,810	1,314	709	456	196	135
Energy	1,175	522	448	115	77	13
Total	3,985	1,836	1,157	571	273	148

Table 3/4 Mineral wealth

in L.E, 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Mineral wealth	1,183	380	429	149	113	112
Total	1,183	380	429	149	113	112

Table 3/5 Health and Medicine

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Saini	300	175	125	-	-	-
Health management	150	30	30	30	30	30
Emergency	100	20	20	20	20	20
Medicine	550	200	170	80	50	50
T.B.	450	167	135	81	34	33
Belharzia	450	160	150	60	40	40
Other Committees research for Health	500	175	150	75	50	50
Total	2,500	927	780	346	224	223

Table 3/6 Environment

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Pollution	5,313	2,897	1,146	740*	530*	-
Vocational Health	1,035	435	275	225	50	50
Resources	1,650	515	335	315	245	240
Education	300	50	50	70	70	60
Other fields	1,592	770	350	257	165	50
Total	9,890	4,667	2,156	1,607	1,060	400

*Were written as 74 and 53 in text. They were corrected according to the totals.

Table 3/7 Transportation and Communication

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Inland Transport	778	110	162	176	187	143
Communication	762	210	169	176	109	98
International Transport	600	160	115	100	175	50
TOtal	2,140	480	446	452	471	291

Table 3/8 Construction and Housing

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Housing	560	225	295	40	-	-
Potable water and sanitary drainage	2,100	1,000	850	250	-	-
Construction and its economics	1,800	530	530	420	160	160
Building materials	1,420	547	478	315	80	-
Urban planning	900	440	400	60	-	-
Total	6,780	2,742	2,553	1,085	240	160

Table 3/9 New Communities

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Environment	850	375	375	100	—	—
Resources	1,300	390	370	390	150	—
Total	2,150	765	745	490	150	—

Table 3/10 Management and Economics

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Management	131	30	20	30	25	16
Economics	155	36	35	30	30	24
Total	286	66	55	60	55	40

Table 3/11 Social and Population

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Law Sciences	32	32	-	-	-	-
Population	480	100	100	95	95	90
Education and Psychology	340	135	140	50	15	-
Development and Social Sciences	1000	200	200	200	200	200
Total	1,852	467	440	345	310	290

Table 3/12 Basic Sciences

in L.E. 1000

New Projects

Field	Total	Estimated Budget Distributed over the Contract Years				
		1st year	2nd year	3rd year	4th year	5th year
Environmental Sciences	70	20	20	10	10	10
Chimecal Sciences	115	60	25	10	10	10
Geological Sciences	74	49	18	7	-	-
Physical and Mathematical Sciences	100	50	50	-	-	-
Biological Sciences	995	280	265	150	150	150
To support and encourage projects with high priorities in the national development	250	50	50	50	50	50
Total	1,064	509	428	227	220	220

Continuous Projects

Table 4/1 Resources and Production

in L.E. 1000

Item	Number of Projects	Total Cost		Balance		1982/1983		1983/1984		1984/1985		1985/1986		1986/1987	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign
Food & Agriculture	27	3552	217	1331	137	848	125	321	2	123	-	22	-	17	-
Industry	10	387	172	121	61	50	61	38	-	33	-	-	-	-	-
Energy	7	625	127	329	79	201	31	76	25	52	23	-	-	-	-
Mineral Wealth	6	2194	530	670	500	465	500	205	-	-	-	-	-	-	-
Total	50	6758	1046	2431	777	1564	727	640	27	208	23	22	-	17	-

Continuous Projects

Table 4/2 Services

in L.E. 1000

Item	Number of Projects	Total Cost		Balance		1982/1983		1983/1984		1984/1985		1985/1986		1986/1987	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign
Health & Medicine	22	899	218	260	171	183	151	53	15	23	5	-	-	-	-
Environment	5	119	51	9	-	-	-	-	-	-	-	-	-	-	-
Total	27	1018	269	269	171	192	151	53	15	23	5	-	-	-	-

Continuous Projects

Table 4/3 Infrastructure

in L.E. 1000

Item	Number of Projects	Total Cost		Balance		1982/1983		1983/1984		1984/1985		1985/1986		1986/1987	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign
Transportation & Communications	5	416	66	246	45	162	22	62	18	22	5	-	-	-	-
Construction & Housing	6	522	67	259	25	241	25	18	-	-	-	-	-	-	-
New Communities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		938	133	505	70	403	47	80	18	22	5	-	-	-	-

Continuous Projects

Table 4/4 Social & Economic Development

in L.E. 1000

Item	Number of Projects	Total Cost		Balance		1982/1983		1983/1984		1984/1985		1985/1986		1986/1987	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreig
Management & Economics	5	75	-	25	-	25	-	-	-	-	-	-	-	-	-
Social & Population	7	68	-	7	-	7	-	-	-	-	-	-	-	-	-
Total	12	143	-	32	-	32	-	-	-	-	-	-	-	-	-

Continuous Projects

Table 4/5 Basic Sciences

in L.E. 1000

Item	Number of Projects	Total Cost		Balance		1982/1983		1983/1984		1984/1985		1985/1986		1986/1987	
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign
Basic Sciences	15	269	462	96	230	86	223	10	7	-	-	-	-	-	-
Total	15	269	462	96	230	86	223	10	7	-	-	-	-	-	-

Chapter Five

Conventions of the Specific Councils

it has been previously pointed out that the specific councils held their conventions in the ministries and agencies concerned with them. The most important item on the conventions's agenda was the discussion of the five year plan of the specific councils. Following are the important events from the conventions:

1. Convention of the specific council for food and agriculture.

The specific council for food and agriculture held its annual convention under the chairmanship of Dr. Mostafa Elgabaly, Chairman of the specific council, on Thursday, June 17, 1982, in the Egyptian International Center.

Invitations to attend the convention were give by Dr Youssef Wali, Minister of Agriculture and Food Security; Engineer Mohamed Abdel Hadi Samaha, Minister of Irrigation; Dr. Ibrahim Badran, President of the Academy; and Dr. Mostafa Elgabaly, Chairman of the Specific Council.

** The program of the convention included the opening session which began with a speech by the Minister of Agriculture and Food Security. The speech was delivered by Dr. Hussien El Kholy and included the following points:

- To recognize the true efforts and continuous pursuit of the Academy for the welfare and development of society.

- To raise some points about the suggested five year plan's projects concerning the necessity of have implementation guided by a group representing all sides of specialization necessary for the implementation process, and the necessity of coordinating between the projects for the plan and other research projects - whether they are either in the process of preparation or implementation - in order to avoid duplication.

** Then Engineer Abdel Hadi Samaha, Minister of Irrigation, delivered his speech in which he recognized the national campaigns adopted by the council, and he pointed out that the campaigns should be expanded to include other important agricultural crops, such as beans and sugar cane. He pointed out that agriculture represents the backbone of the national economy, and developing agriculture is a national necessity, especially since the basic elements for the agricultural development are available, i.e., land, water for irrigation the year round, suitable climate for raising different crops, and the Egyptian farmer's ability to apply the most advanced systems. However, the agricultural advising role and the problem of farmer emigration should not be forgotten. Besides, although there are many experts and research workers, the matter still needs organizing the efforts and directing them in the right direction.

It is necessary to form the research groups and the implementing groups in such a way that they include agricultural engineers, economists, and social workers, in order to have the results as expected. It is clear that the potential for success is present, but the gap between production and consumption is widening. He recommended that representatives of the Ministry of Irrigation join both the specific council and the departments of resources. He then pointed out the main features of the Ministry of Irrigation and its plans. He also added that the ministry is working on providing water to different areas.

** Then the President of the Academy delivered his speech. He pointed out that the spcific councils in the academy have finished formulating their five year plan which conforms with both the development requirements and the national problems during the next five years. He added that the agricultural sector will remain the main base for both economy and development. Technological development will further help speed up the development process. It is necessary to follow both vertical and horizontal expansion in agricultural production. The academy has given top priority to food and agricultural

projects that aim at the best use of land and water resources in pursuit of maximizing the return, both productivity of food and strategic crops, and animal production.

** In the speech delivered by Dr. Mostafa Elgabaly, the Chairman of the Council, during the opening ceremony he explained how the specific council and its departments were formed.

He then presented the council's activities, and explained the positive results of some of the national projects adopted by the academy, such as the maize, rice, and cotton projects. He said that similar efforts are underway to improve production of wheat, sugar crops, beans, and lentils. He then talked about the topic of water resources, and that the drainage waters are being considered now as an irrigation resource - after being treated. He pointed out that it is important to identify the problems facing agriculture in Egypt which are basically due to the deterioration of soil properties.

He later added that the academy is a planning agency whose goal is the coordination and integration of working personnel in the area of scientific research for the benefit of Egypt. It is important, he stressed, to concentrate on a limited number of problems without duplication. He then suggested that the role of the Ministry of Agriculture, other implementing agencies, universities, and research institutes is basically implementation.

He further presented the research problems that were included in the plan which heads of departments would later present in detail. He also named the important current projects that the council is supervising.

The program of the convention included working sessions for discussing the five year research plan for the council that covers plant production, plant protection, resources, economy and social development, and animal

and fish production, nurishment, and agricultural economy.

Discussions lasted until 6 p.m. of the same day and ended in approval of the projects presented and the following recommendations:

Recommendations of the convention:

1. To allocate approximately 10 percent of the required budget for the purpose of financing new projects or ncessary projects that come out from the study.

2. In the area of plant production:

- The convention approved the five year projects presented by the department of plant production, taking into account the following points:

. To concentrate during this stage on applying the sure results of research in the area of production of strategic agricultural crops. This will be done through a national campaign in which integrated teams of research personnel will participate in connection with both implementing personnel and agricultural advising agency.

. To list wheat in the strategic crops to be studied during the current stage.

. In order to guarantee implementing the goals of the national campaigns to improve production of the strategic crops, the convention stressed the following points:

a. To study the feasibility of having the campaigns cover the whole country in a maximum period of five years.

b. To increase the effectiveness of the agricultural advising agency through organization and training, and to connect it with the scientific research agency.

c. To study the introduction of mechanical equipment suitable for the small areas of property which are prevalent in Egypt.

d. To encourage forming national companies for the production of seeds.

e. To form an agency which will be responsible for the pricing policies of agricultural products.

f. To design a system for following up and evaluating results of the national campaigns.

g. To continue with the policy of supporting farmers participating in the national campaign.

. To activate the role of scientific research in solving the development problems, and to increase the percentage of the national income assigned to scientific research.

. To assign incentives, both moral and monatary, for scientists who developed crops with high productivity which made an impact on agricultural production.

. The necessity of studying the problems and obstacles in the way of benefiting from the results of research proejcts.

3. In the area of plant protection:

The convention approved the projects presented by the department and pointed out the following:

. Increasing the budget for studies on diseases and pests that attack beets in Egypt.

. Coordination between the current project in the Ministry of Agriculture concerning the studies on diseases that attack onions both in the field and during storage.

. Studying the relation between the Sinai projects and projects of surveying the different agricultural pests in Sinai.

. The studies on short season cotton should include Fuseum wilt and Sorechin.

. It is necessary that the studying of both pests and plant protection be part of an integrated study concerning the increase of

production.

4. Area of resources:

The convention approved the plan for research concerning resources which is represented by the following new projects:

. To study the water requirements for the different crops in the Nile Valley and new, reclaimed areas, and to compare different, new irrigating methods for: efficiency, cost of energy, labor required, and the effect on crop production.

In addition, to study the current projects concerning: drainage, production map, improving sandy soil, and underground water.

5. Area of animal and fish production:

The convention approved the projects presented by the department (stressing the importance of these projects), and pointed out the following important points:

. To benefit from the results of finished projects and the integration between them.

. To study the feasibility of producing cheap poultry food to be used in villages.

. To put more interest in fish farms and the production of food for the fish farms.

. To evaluate the effect of mechanization on animal production.

. To give increasing attention to the policy of providing fodder and to perform a feasibility study for fodder manufacturing.

6. Area of food industrialization:

The convention approved the projects presented by the department.

7. Area of economy and social development:

The convention approved the projects presented by the concerned department. The discussion raised the following points:

. A detailed study on the reasons for the underdevelopment of the Egyptian village. In this study help will be requested from specialized research personnel and previous studies performed, while great attention will be gien to animal production projects in the village.

. To pay more attention to the Egyptian village and the effect of emigration on the shortage of agricultural labor.

. To study the effect of the mass media on rural population.

. To evaluate the product pricing policy in light of other changes.

. To project the future status of agricultural labor in light of the Egyptian agricultural skeleton.

. To pay increasing attention to the economic evaluation of projects for densifying the agricultural products with both systems for irrigation and marketing.

2. Convention for Specific Council for Industrial Research:

The annual convention for the specific council for industrial research was held under the chairmanship of Engineer Abdul Wahab Selim Elbishry, President of the Council, on Monday, June 21, 1982, in the convention hall of the Ministry of Industry and Mineral Wealth. The invitation to the convention was presented by Engineer Fouad Ibrahim Abu Zaghla, Minister of Industry and Minseral Wealth and Dr. IBrahim Badra, President of the Academy.

The following personnel were invited:

. Members of the Peoples Assembly and the members of the different committees of the assembly.

. Representatives of the Ministry of Industry and Mineral Wealth.

. Presidents of different industrial companies.

. Chairmen of research teams for the different projects of the council.

. Representatives of the Ministry of Military Production.

. Representatives of G.O.F.I.

. Representatives of universities and research centers.

The program of the convention included the opening ceremony which started with the speech delivered by Engineer Fouad Abu Zaghla, Minister of Industry and Mineral Wealth. Following are highlights of his speech:

. The Ministry of Industry and Mineral Wealth has great faith in the processes of research and development. They are necessary for the development and improvement of industry. The ministry believes that research is one way of improving the quality of products and decreasing their cost, in addition to developing new ideas and new markets.

. Concentration on exploiting local resources and replacing imported one.

. The Ministry, with all its departments and agencies, will give full support to research and development.

. The Ministry will strengthen the ties between its factories and the academy and the academy's research centers in all aspects of cooperation. This can be done by contracting for applied research needed to solve particular problems.

. The Ministry participates in activities of the specific council for industrial research, in the meetings of the committee for technological policies, and in studys on environment, transfer of technology, and both new and renewable types of energy.

Then the Minister of Industry and Mineral Wealth gave a list of centers for research and development under the Ministry of Industry.

The President of the Academy then delivered his speech which concentrated on the following:

. To seek more coordination and integration between the scientific research sector and the application. This integration will be reflected in positive gains to local industries.

. To have the industry participate in solving the problems of food security, such as the project for producing Feta cheese with standarized accepted characteristics.

. To have concerned authorities, both on the scientific and industrial levels, solve the problems faced in the spinning and weaving industries.

. To identify the framework of the problems that are hindering the progress of different industrial activities.

. The President of the Academy then pointed out the projects included in the plan of the specific council that had a national identify and which will, hopefully, have a great effect on the national industrial production.

The opening ceremony was concluded by the speech delivered by Engineer Abdul Wahab Elbishry, Chairman of the Council. In his speech he pointed out the following:

. In forming the specific council, it was planned to have the best combination of heads of companies that represent different branches of industry, and a number of university professors and personnel from research centers concerned with industrial activities.

. The policy of the council spins around two main axes:

The first is determining the priorities for research and development projects which conform to the needs of the national economic, development and social plan.

The second axis is to strengthen the ties and relations between scientific research agencies and industries.

Then he presented the five year plan of the council.

The convention program included working sessions for different committees to cover all aspects of industrial production. These committees discussed the five year plan for the council.

Following are the important points discussed in the convention with the recommendations:

** In the field of chemical industries:

. The five year plan for the department of chemical industries research was approved.

. The necessity of coordination between the potable water authorities in both Cairo and Alexandria, while taking into consideration the use of local resources concerning the project, "Production of Alum from Egyptian Silt".

. That the project for nickel catalyst production from local resources should be the start of similar research projects for other catalysts.

. That the project labeled, "To benefit from industrial wastes in the manufacture of some Flourine salts necessary for the Aluminum industry: should be checked as to the feasibility of using carbolite in producing some types of glass.

** In the field of the metal industries:

. The approval of the five year plan for the department of metallic industrial research, noted the following:

a. To tie between expansion in producing reinforcing steel in the existing companies, and the new projects for producing high resistance steel.

b. To study the methods of shaping the reinforcing bars mechanically so that they will be ready for immediate use at the sites.

c. To collect all available studies concerning the rusting of reinforcing bars in concrete, and to make the best use of the national study about building materials.

d. To put to application the study performed by the department

of economics in El Tibeen Institute for Metallic Graduate Studies, concerning the consumption of special steel up until the year 2000, in the project of estimating the local consumption and the feasibility of producing the needs locally.

e. The ration of vanadium in the ore should be considered concerning the production of the El Nasr Company for pencils and graphite products.

f. To put to application all the previous studies in the area of production of the verotitanium ally (on the semi-industrial level) from the local alminite ore.

** The area of the engineering industries.

. The convention approved the five year plan for the department of the engineering industries research. Besides, the convention recommended the quick start for the two following projects, i.e., the improvement of railroad cars produced locally, by both reducing their weight and improving their performance, and the project for reducing the noise level in air conditioning sets produced locally by Koldair.

** In the area of food industries:

. The convention approved the five year plan for the department.

. The convention suggested the increase of the budget of two projects, which are: Updating the study data on the packages made in Egypt; and to develop and improve the wrapping and packaging industry.

** In the area of spinning and weaving industry:

. The convention approved the five year plan for the department of spinning and weaving industry research.

** The committee suggested that the laboratoy for microscopic living organisms in the national research center adapt the use of methanol - which results from the production of polyesters - in producing proteins.

. That the company for production of dying and chemical materials should adopt the esterification of the trifithialic acid from

ethylene - instead of the dimethyl trifithlates currently used - to produce polyester. This will introduce the methanol into the cycle instead of being considered as a waste.

** In the area of building materials and ceramics industry:

. The convention approved the five year plan of the concerned department.

. To approve giving priority to the production of bricks used in making melting pots (40-42% alumina) and to improve the production to international standards. Also, the continuation of producing bricks for melting pots made of silica (local resource) suitable for the oxygen steel.

. It is recommended having the production of magnizite ceramics locally produced, reach universal standards.

. It is recommended to start research concerning the feasibility of producing cement sulfates in the national cement company. Besides, to begin exploring the most economical method for the use of dust which accumulates in the furnaces of the dry cement factories. The dust could reach tens of tons annually which is an obstacle to the industry.

. To recommend presenting a project for both the El Nasr Company for glass and crystals and the National Research Center concerning use of Egyptian sands in the industry.

** In the field of electrical and electronic industries:

. To approve the five year plan for the department of electrical and electronic industries research.

. To agree on increasing the budget allocated for the treatment of leakage in dry batteries to LE 50,000, and to re-operate the zinc chloride unit in the general batteries company and the mangaznese dioxide.

- Other recommendations:

- To have samples of successful projects presented to the next annual convention.

- To coordinate between different specific councils since some of the projects are connected with more than one council.

- To recommend that the instruments and equipment that will be brought by the academy be eventually transferred to the different research centers in order to support the research activities at these centers in the future.

Concerning the incentives and allowances for the research personnel, the following was recommended:

. To allocate a certain percentage of the total budget for the research project to be left in the academy and to be distributed to the research perso-nel (other than the regular allowances) when the company benefiting from the research decides that the research fulfilled its goals.

. To deliver the incentives to the research personnel from the incentive budget of the academy, which is not limited by a percentage, on the condition that the specific council decides that the research fulfilled the desired national return.

The engineering industries committee recommended surveying all specialized personnl in the field of every research project to create the nucleus of specialized research groups, along the path of forming the metal society.

3. Concention for specific council for oil, energy, and mineral wealth research:

The date for holding the convention is not yet determined.

4. Convention for specific council for health and medical research.

The convention was held according to the invitation presented by Dr. Mohamed Sabry Zaky, Minister of Health, and Dr. Ibrahim Badran, who is both the president of the Academy and the chairman of the specific council, on Monday, June 29, 1982, in the Nutrition Institute in Cairo.

Attending the convention were members of the specific council, and members of the council's different committees and departments, high ranking officials in the Ministry of Health, including some of the minister's deputies, deans of colleges of medicine, pharmacy, and dentistry, professors from those faculties, heads of medical and pharmaceutical research organizations, and medicine companies and research personnel from both medical and pharmaceutical research centers.

Dr. Ibrahim Badran presided over the convention and Dr. Abdul Wahid Besila was the secretary general of the convention.

The meeting began with a speech delivered by Dr. Sabry Zaky, Minister of Health. In his speech, he stressed the importance of cooperation between the Academy and the Ministry of Health to identify the research areas of both priorities and the importance for developing the health services and solving problems of presenting those services to the people. This is represented by fighting typical Egyptian diseases, health management, emergency services, basic medical sciences, and medical research about the new communities and Sinai.

He then supported the idea that the scientific course of action in both research and application is the main direction to achieve real development in the area of health and medicine, and the more the plan conforms with the needs of the development of the society, the more the benefit gained from the goals of the plan.

He then added that his hopes are high with Dr. Ibrahim Badran as President of the Academy, who was a former Minister of Health. He hoped that this period will be one of the most productive in the area of health services.

He pointed out that the Ministry performs a positive role through its representatives on the council. The ministry is careful about continuous contact with the academy with the aim of determining priorities in the area of research that develop and improve health services.

Then Dr. Ibrahim Badran, President of the Academy and Chairman of the Council, delivered his speech in which he presented a complete picture of the general directions of the academy's plans and its manner of supporting research. Also, he presented the general directions of the plans of the specific council and the scope of the five year plan for both the academy and the council. He gave examples of the important health issues that require research and studies in the area of developing health services, health production, improving treatment methods, cancer, accidents, old age, addiction, and nursing.

On the role of the academy, he pointed out that the role is identified through the function of integrated specific councils that have more than 1000 research personnel in different fields of science, who give a great effort and present their experiences to identify the problems and supervise the necessary research and studies to solve those problems. The scientists implement the integration of different fields of knowledge, which leads to the best utilization of our national resources (both material and human).

He then pointed out that the health condition in the country has improved in the part 40 years due to the change in diet; the improvement in medical care; fighting epedemics; improving health services; and the amazing progress in both research and medical and applied sciences.

Then Dr. Abdul Wahid Besila, the secretary general of the council, presented a summary of the activites of the council and its five year plan and the agenda of the convention.

. Study sessions were held to review and discuss the five year plan of the council.

- Dr. Mamdouh Gabr, Deputy to the Chairman of the Council, presented the plan for the health research department and the important research projects of the department.
- Dr. Abdul Aziz Sami, the Head of the T.B. and Bronchial Diseases Department, presented the five year plan of the department and its achievements.
- Dr. Ahmed El Garim, the Secretary to the Bilharzia Committee, presented the plan and achievements of the committee.
- Dr. Hamid Roshdy El Kadi, Secretary of the Research Committee on Health Applications of Radiation, presented the completed health research projects with an outline of the research plan for the committee.
- Dr. Mohamed Dawood El Tennir, Deputy Head of the Sinai Research Department, presented the research plan of the department.
- Dr. Abdul Hag Mashour, Head of the Emergency Research Department, presented an outline of the research plan for the department.
- Dr. Farag Rizk Hassan, Head of the Health Management Department, presented the plan for the department and its research projects and the plan for research on medical education and human development, especially nursing.
- Dr. Abdul Wahid Besila, Secretary General for the Committee on Research for Medical Basic Sciences, presented both the plan and the research projects and studies of the committee.
- Dr. Abdul Sallam, Deputy Chairman of the Council and Head of the Medical Research Department, presented the working plan for the department and suggested research projects.

Important points that were discussed:

A wide discussion took place in which many of the personnel attending the convention participated. Among those present were: Drs Ibrahim Badran - Ahmed Elbanhawy - Ahmed Elgarem - Ahmed Elsawy Shokry - Ahmed Nadeem - Ahmed Safwat Shokry - Alsayed Salem - El Motaz Bellah Mobarak - Hosni Timerak - Zakaria Gad - Sayed Hilal - Shafik Balba - Adel Montaser - Abdul Aziz Sami - Abdulwahid Besila - Abdu Sallam - Osmal Galal - Esmat Ezz - Farag Rizk Hassan - Fouad El Hifnawy - Lotfy El Sayad - Laila Kamil - Mahfouz Kassem - Mohamed El Kirdawy - Mohamed Nabil Elbilkeeny - Mahmoud Sherig - Momdouh Gabr - Mohamed Tawfeek - Mohamed Mahmoud Abdel Kader - Kozal Mahmoud Kamel - Nabahat Mohamed Fouad - Hammam Mohamed Hammam.

The discussion resulted in the possibility of adding some research and studies.

The recommendations presented by the convention included the following:

* To approve the suggested plan.
* To add more research points and studies, amont the most important are:

- To improve health services.
- To develop nursing styles and to train the necessary manpower for emergency services.
- To determine the nutrition condition of the Egyptian citizen and to identify his diet needs in order to formulate a coherent diet policy.
- To improve the medical education (both basic and clinical) and training, and to develop the labor force necessary for supporting medical services.
- To improve the medical records system and documentation.
- To perform research for evaluating vaccinations for children.
- To pay more attention to research concerning diseases of old age.

- Research on the stability of medicines.

5. Convention for the specific council on environmental research.

On Sunday, June 20, 1982, the convention for the council was held under the chairmanship of Dr. Mohamed Abdel Fattah ElKasa, Chairman of the Council. The invitation to the convention was given by Dr. ElKasas, Chairman of the Council, and Dr. Ibrahim Badran, President of the Academy.

The governors and leadership of scientific research in universities and different research centers were invited to the convention. Also, different personnel in the ministries and different agencies concerned with environment were invited in addition to the members of the council and the national committees.

Many experts and specialists from the sectors mentioned earlier participated in the convention.

In the opening session, Mr. Adel Abdel Baki, Minister of the Cabinet's affairs and State Minister for Management Development, delivered his speech. He pointed out the following:

. The great efforts of the academy and its agencies to preserve the environment in Egypt, to promote environmental consciousness, and to present a true picture of the situation to the decision maker which gives a great push to the effort of formulating the rules for national environment organization.

. The effective role of the specific council in the past few years in planning and coordinating in the area of research and studies in the field of environment, and the results of the research and studies in facing many of the environmental problems in Egypt.

He then added that the important role expected by the country from scientific research while implementing an ambitious development plan should consider the following:

. To limit the adverse effects of development projects and to suggest methods to be adopted.

. To treat the present environmental problems in a practical manner that stems from local conditions and takes available resources (both human and material) into consideration.

. The academy and its agencies will follow a course of action in their research policy that serves both the development plan and the present age needs.

. That the scientific research will not stop with the academic aspect. Rather, it should surpass that to present to society the results of research in applicable forms and means.

. To appeal for more applied research.

. To give priority to financing the projects that deal with the problems of the society and the environment and the problems that help in presenting practical solutions that push development while, in the meantime, preserve the environment and do not exhaust the natural resources.

. To pay greater attention to the efforts, research, studies, and philosophies of the environmental scientists for the benefit of the country.

Then, Dr. Ibrahim Badra, President of the Academy, delivered his speech. He pointed out the special attention given by the academy to research and studies on environment. He also said that most of the environmental problems were born with the dawn of the industrial revolution which was accompanied by great leaps in scientific progress. Environment, understandable, is where mankind lives and where he performs his social and productive activities. It includes all the natural resources, i.e., land, water, air, and human resources in a specific place during a specific period of time. All these factors are subject to change with time, both in quantity and in quality, in conjuntion with the interest of man. This stresses the

great importance of rationalization of development that goes hand in hand with using modern technology, especially in the area of energy - to conform with the requirements for preserving the environment.

Therefore, Egypt has given increasing attention lately to the issue of environment. A committee for environmental affairs was formed in the Cabinet to formulate the official policy regarding the preservation of environment and natural resources. The committee is working on forming an Egyptian network to record environmental records all over the country, and on supporting the national agency - for protection of wild life - with the Ministry of Agriculture.

The role of the academy concentrates on forming a national program for research and studies on environment. This function is carried out by the specific council which designed its five year plan which includes 12 projects in the areas of protectin environment from pollution, natural resources; vocational health; education and environemnt; and some working papers on other research activities in other areas of environmental studies.

Then Dr. Mohamed Abdel Fattah Elkasa delivered his speech. He welcomed the personnel attending the convention and pointed out the following:

The importance of holding the convention where both programs and projects for the research plan for an important subject "environment" will be discussed.

- The necessity of forming a national program for research and studies on environment that aims at:

. Preserving the environment and protecting it from pollution which hurts mankind.

. Rationalizing the consumption of natural resources with protecting the efficiency of the environmental systems.

- The interest of Egypt is increasing in forming the elements of a national organization for environment to include the following:

. The committee for environmental affairs that follows the cabinet and is chaired by the Minister of the Cabinet Affairs and the State Minister for Management Development. The committee is concerned with formulating Egyptian policy in the area of protecting the environment and natural resources, approving implementation of programs and plans, and issuing the laws concerned with environment.

. An Egyptian network for environmental records that cover the country and follow the Ministry of Health.

. A national agency to protect the wild life that follows the Minister of Agriculture and Food Security.

. Preparing a national program for environmental research and studies which is one of the principal goals of the specific council of environmental research in the academy.

The important points that were discussed:

The convention held detailed dicussions during its working sessions on the programs and projects in different areas of environment, and discussed the papers presented in the area of environemtnal presented in the five year plan, which are:

- Area of research for protecting environment from pollution.
- Area of vocational health research.
- Area of research for natural resources environment.
- Area for research on: mathematical models, data, economy, environmental legislation, and the social studies connected with environment. (Working papers were presented in those areas).
- Environmental sutides to be done by the specific council itself.

The discussion led to approval of the five year plan, taking into consideration the main ideas developed during the discussion which can be summarized as follows:

* Research protecting the environment from pollution:

. The convention approved the research projects presented to the convention.

. The issue of potable water is a national one that requires coordination and integration of concerned agencies.

. The necessity to concentrate on identifying sources of pollution of potable water and how to eliminate those sources and choose the best technology to treat drinking water.

. To determine a national plan for treating industrial wastes within the framework of the five year plan presented.

. To pay more attention to the studies concerned with technology of treating liquid industrial wastes in their different forms. Priorities should be given to the valuable industries while taking into consideration pollution resulting from oil.

- To support the capabilities of organizations performing the research with graduates of institutions and qualified scientific personnel for working in the laboratories . . . etc.

* Vocational health research:

. Approval of research projects presented to the convention.

. It is necessary to make use of studies in this field performed by the International Labor Organization.

. It is necessary that the studies be performed about the labor environment for all sides of the problem, not only the labor environment in industry.

* Research on natural resources environment.

. The convention approved the research projects presented.

In that respect it was pointed out that the recommendations declared by the convention on the deterioration of agricultural land which was held in Menya, be adopted, taking into account problems resulting from both land deterioration and desertification of agricultural land areas.

. To take into consideration the pollution of environment through the use of fertilizers.

* Environmental education:

. Projects presented were approved.

. Recommendations were given as to the necessity of adopting two educational courses of action: one that covers the country as a whole; and the second which covers environment regionally.

. The academy should hold some symposiums, to be attended by political leaders and responsible personnel in industry, which aim at promoting awareness of environmental pollution and how to limit the effect of pollution.

. To pay more attention to the morals of environment.

. The necessity of connecting between religion and improving environmental conditions, in addition to introducing environmental education into the Police Academy and military forces (for drafted individuals).

* Constructing the environmental models:

. It is important to support and develop the scientific cadres specialized in the area of systems analysis according to environmental conditions.

* National environmental legislation:

. Members of the convention stressed the importance of issuing some laws concerning the protection of environment. Previous laws and regulations will be collected, reviewed, and categorized. Then, with

the help of law personnel and taking into consideration economic factors, the new laws will be presented for issuance.

The annual convention of the council included the following:

* The convention agrees that the five year plan of the council includes some research projects that fill the gaps existing in current programs. However, it does not represent an independent national program for research on environment. It is hoped that the chain of information would become connected to the academy - represented by the council - and other current research activities in order to fulfill the coordination necessary to formulate a national program for environmental research which will consist of research elements financed by both the academy and other authorities.

* The convention sees that the five year research program for the council consists of three sectorial directions (vertical) which are: protecting environment from pollution, vocational health, and research on the environment of natural resources. The program consists of five (horizontal) directions that are connected to all sectors. They are research for: education and training; models and systems analysis; environmental laws; social studies; and economic studies.

* The convention recommends the preparation of a review of all previous studies in the field of air pollution performed in Egypt as a first stage to formulating a research program in that field.

* The convention recommends performing environmental studies on two systems, one urban and the other rural, whenever possible.

* The convention recommends that implementation of the projects of the research plan - should be - in their first stage for two years. Then the renewal of each project depends on the results obtained during the first stage. Some projects, such as those in education, will be exempted from the condition. Their first stage will be for four years.

* The convention stresses the necessity of participation by benefiting agencies in both financing and experience. In addition to benefiting from foreign aid in that respect, the academy carries on the rest of the financing program according to available budgets.

* The convention recommends that the specific council restudy the estimated budgets for the projects of the plan in a realistic manner which considers in detail the items of budget for each project separately.

* The convention recommends adopting all the different ideas presented during the discussion in the process of final formulation of the research plan for the council.

* The convention recommends that the academy study the five year plan of the council after its final formulation. This will be done within the framework of integrated coordination with other programs of the different specific councils.

* The convention sees that the start of the five year plan of the council should be after the avademy determines the budget for the specific council for environmental research.

* The convention recommends taking geographic distribution into consideration which is done by having different authorities participate in each project, with standardizing methods of analyses through a coordinating committee, which is formed from research personnel and implementing technicians in different sites.

* The convention recommends that a data unit be attached to each project. Each of the units will collect and categorize data to maximize the benefit in utilizing the data.

* The convention recommends the formation of an implementing agency to supervise applied activities of the program for environmental protection.

* The convention recommends paying more interest to the problem of water resources (both in quality and quantity), water uses and the quality of water in distant areas.

6. Convention of the specific council for transportation and communications research

The invitation to hold the convention was given by Engineer Soliman Metwally, Minister of Transportation, Communications and Maritime Transport; and Dr. Ibrahim Badran, President of the academy; and Engineer Soliman Abdel Hay, the Chairman of the Council. The Sixth Annual Convention for the Council was held on Sunday, June 20, 1982 in the railroad complex in Cairo.

The Minister of Transportation, Communications, and Maritime Transport presided over the convention.

* The convention's program included the opening ceremony speeches. The first speech was that of Engineer Soliman Metwaly, Minister of Transportation, Communications, and Maritime Transport. He welcomed the personnel attending the convention and he added that the academy is following a new strategy in actual participation of implementing agencies in the activities of the specific council; such as the discussion on the research projects in the five year plan which promote integration between both the scientific and implementing agencies. He pointed out that the sector of transportation, communications and maritime transport is on top of the infrastructure sector of the nation. The development of that sector and the progress achieved in it is reflected immediately in the development of the other sectors.

The transportation sector, in conjunction with foreign consulting firms, performed a study on the development and needs of the sector in the year 2000. This study was performed in order to determine the projects that the sector needs in the immediate future. The transportation sector also performed some

studies with local research centers, universities and scientific centers. The ministry is currently forming the high institute of transportation to perform specialized scientific studies in that field, in addition to training sessions for personnel and preparing the required cadres of specialists. Other training centers are being formed for the areas of roads, railways, and communications.

Concerning the research plan presented by the council which will be discussed by the convention, it covers many subjects in all of the transportation sector. This will, hopefully, find suitable solutions for the problems due to the close cooperation between the academy and the transportation and communications sector.

Then Dr. Ibrahim Badran delivered his speech. He talked about the great effort exerted by the council in a short period of time. The council was able to formulate a five year plan that was the result of many meetings and discussions that centered on a successful plan and giving priority to the demanding problems connected with national objectives in the transportation and communication sector. He then added that the academy is following a new course of action which is holding the annual conventions under the auspices of concerned ministries and agencies with the aim of strengthening the ties between the academy and the agencies.

He concluded the speech by thanking the Minister of Transportation, Communications and Maritime Transport for his cooperation and for hosting the convention.

* Then Engineer Soliman Addel Hay, Chairman of the Council, delivered his speech. He pointed out that this year's convention differs from previous conventions according to the new policy adopted by the academy. According to the new policy, research workers and specialists in the specific council present their suggestions which include the weak points and they request the

help of more research to be performed by experts in the implementing agencies. He mentioned that the council has worked on some of the problems that are chronic in the sector. Implementing solutions to those problems will help increase the working efficiency of the sector. He then requested the Minister of Transportation to execute the recommendations of the convention of the previous year concerning allocating a percentage of the production sector in the ministry of the support and development of scientific and applied research in the transportation and communications sector in the academy.

Afterwards, the convention held five working sessions.

The most important points discussed and decisions and recommendations were:

In the area of inland transportation:

- Approval of the five year plan for the department.
- A discussion was held concerning the effect of vehicles on pollution of the environment (including that of noise). It was recommended that transportation should be carried out according to studied scientific planning in order to have a good effect on the national economy.
- It was decided that is is important to hold a symposium about inland transportation which covers the topic of "Storage and Its Problems and Its Relation to Transportation", because of its vital importance from an economic point of view.

In the area of communications:

- All suggested short range studies were approved. Also approved were research projects in the plan which are long range projects. It was obvious from the discussion that solutions will be achieved soon for the urgent problems.

One issue that was given some attention was the necessity of surveying and collecting all previous studies in the field, besides the practical experience of Egypt in the communications field.

In the area of international transport:

The five year research plan was approved for both the short range studies and long range research.

The convention recommended that it was important to have the Ministry of Petroleum participate with the research agencies in the following project, "Study of Ways and Means of Central Navigation along the Egyptian Coasts in the International Water".

Recommendations of the Convention:

* The convention approved the research projects of the plan according to the priorities given to the continuous projects, followed by special projects with special arrangements which are currently being contracted. The convention also approved the new projects and gave the council the decision as to arranging them according to priority.

* The convention decided to form a committee to determine the manner of execution for the decree of the Minister of Transportation, Communications, and Maritime Transport concerning the participation of the ministry of the research project of the council. The minister declared in the fifth annual convention of the council the decision to allocate a certain percentage of the returns of the production sectors in the ministry to support and develop both the scientific and applied research in the transportation and communication sector in the academy.

* Since it was noticed that the research agencies are numerous for one project, the convention recommends that the research work be done in one agency, whenever possible.

7. Convention for the Specific Council on Research for Construction and Housing.

The annual convention for the specific council was held on Tuesday, June 15, 1982, in the Ministry of Housing, Construction and Land Reclamation in response to an invitation by Engineer Hasaballa El Kafrawy, Minister of Housing; Dr. Ibrahim Badran, President of the Academy; and Dr. Ahmed Moharam, The Chairman of the Council.

The convention began with the opening ceremony. First, Engineer Ibrahim Nageeb delivered the speech for Engineer El Kafrway who was sorry not to be able to attend because of a commitment to travel to Sharkia Governorate. The minister wished the convention success.

Then, Dr. Ibrahim Badran, President of the Academy, delivered his speech. He said that he was happy to have the council hold its convention in the ministry which is concerned with formulating the national housing policy. This should be a starting point for a national effort - backed by science - to solve the housing problem which is one of the most difficult problems facing Egypt. As a matter of fact, the specific council in the academy has formulated a five year research plan that is put in the service of the Ministry of Housing and Construction for solving this national problem.

Then Dr. Ahmed Moharam, Chairman of the Council, delivered his speech. He said that the idea of holding the conventions of the specific councils in the concerned ministries (the ministries benefiting from the research of the specific council) is a good idea. This style of operation should continue to fulfill the integrity of the job.

The Egyptian population has approximately 44 million people at the present time, and it is expected to reach 70 million by the year 2000. It is reasonable to agree with the idea that the increase will be 50 percent for urban areas (cities) and 50 percent for rural areas. This assumption leads to giving more interest to the existing cities because their infrastrucutre already exists. The need will be to expand and repair the systems, not to begin them, as is the case in the new cities where heavy expenses are required.

The national housing plan showed the need for 3,600,000 housing units. It is therefore reasonable to conclude that half of the units will be constructed in new cities, while the other half will be constructed in old cities. The national plans to reclaim about 2,800,000 feddan by the year 2000. Therefore, the increase in rural population should be divided into two parts. One part will live in the old villages, while the other part will live in new rural communities where the population's jobs will mainly be agricultural and agro-industrial. Therefore, it is requested to adopt rural planning, rural housing, and rural services in these new communities.

The role of scientific research in this council is to study the volume of work needed and to identify the research work that aims at improving the efficiency of execution in order to save time and to speed execution. Also, it is necessary to use modern methods of construction and the latest universal techniques in different stages of construction.

Working sessions followed the opening ceremony. In the sessions, the activities of the council were reviewed and the five year plan for the five departments of the council was discussed. The convention recommended the following:

1. General recommendations:

- To approve the five year plan for the council.
- To have the benefiting agencies participate in financing the research with the academy.
- To have the personnel working in the benefiting agencies assigned to the research team whenever possible.
- To hold mauals* for workers in the construction field to familiarize them with the specifications of the good industry. Workers include: engineers, foremen, laborers, and technicians.

* As written (in English)

- Budgets to perform the research are only estimates.
- The suggested research agency or agencies act only as guides. Any other agencies can be added.
- To identify the weak points in the Egyptian personality in order to strengthen them.

2. Recommendations concerning the departments of the council:

First: Housing department:

a. Rural housing department:

- To finish the second stage of the research on rural housing unit and the development of the Egyptian village.
- To have agricultural engineers and local governing units participate in the research on the rural housing unit. In addition, the project should be extended in order to have some practical experiments performed.
- To construct agro-industrial complexes to promote settling.
- The plan presented by the committee was approved.

b. Urban housing committee:

The plan presented by the committee was approved.

Second: Department of potable water and sanitary drainage.

- The convention drew the attention to the fact that due to having the governorates assume responsibility for utilities (in light of local governing rules) the supervision will be short of that needed because of the shortage in working engineers and technicians in those governorates. Therefore, the convention recommended that the academy perform the duties of both coordination and cooperation between working personnel in the utilities departments and the scientific agencies in those governorates.

- To pay more attention to the planning of both potable water and sanitary drainage utilities for every building under construction.

- The plan presented by the department was approved.

Third: Department of building materials.

- The two following projects will be added to the projects presented by the department:

. Project presented by Engineer Gad El Kareem Fahmy, President of the Board of Directors of the Helwan Cement Company. The project is about: "Getting rid of wastes resulting from the dry manufacture of cement". He pointed out that his company is willing to help in financing the project. He was requested to present a summary of the project. The convention recommends that the National Research center, the General Authority for Housing, Research, Construction and Urban Planning and other cement companies participate in the research.

. The project presented by the president of the Iron and Steel Company on "Use of furnace slag in building materials".

- The plan presented by the department was approved.

Fourth: Department of Structures, Construction and Construction Economics.

- To have the General Authority for Housing Research, Construction and Urban Planning participate in the first three projects presented by the department.

- To limit the scope of research number 7 concerning problems of construction management projects, to study types of contracts in the construction area in order to choose the most suitable for further study. Legal personnel are needed to participate in the research team.

- Concerning what was mentioned in the research number 7 - about studying different methods of planning, follow-up and feasibility studies of construction projects - the convention suggested that the report issued by the World Bank in that respect is sufficient at the present time. It is only necessary, therefore, to hold study sessions in those subjects to familiarize personnel working in the field with the modern methods of planning, follow-up and feasibility studies.
- The plan presented by the department was approved.

Fifth: Department of Urban Planning.

- To rearrange the project priorities in the following order:
  1. To study planning of monument areas in Cairo.
  2. To study the problem of both traffic and parking in Cairo.
  3. The efficiency of management of large cities.
  4. Basis and measures of evaluating different suburbs.
  5. The broad features for Egyptian cities in the year 2000, and the possibility of their expansion into the desert.
  6. Basis and rates of planning for different planning levels.
- The plan presented by the department was approved.

8. Convention for the Council for Research on New Communities.

The annual convention for the specific council was held on Tuesday, July 27, 1982, in the building of the Ministry of Reconstruction and State Ministry for Housing and Land Reclamation.

Invitation to the convention was extended by Engineer Hasaballa El Kafrawy, Minister of Reconstruction and State Minister for Housing and Land Reclamation, and by Dr. Ibrahim Badran, President of the Academy.

Engineer El Kafrawy, President of the convention and Chairman of the Specific Council, delivered his speech. He began by pointing out the cooperation between the academy and the agencies of the Ministry of Reconstruction.

Then he suggested forming a union for local engineering consulting offices to face the competition of the foreign consulting offices and he suggested reaching for the cooperation of Egyptian expertise in correcting the path of studies for new communities, especially those concerning Sinai and urban development. Coordination is very essential for guarding against duplication or repetition in the projects carried out by the Reconstruction Consulting Committee and other agencies.

Then the President of the Academy delivered his speech. He began his speech by thanking the Minister of Housing and Reconstruction for hosting the first convention for the council. He pointed out that the two most important issues that the minister presented to Egypt are: reconstruction and training. The reconstruction issue is in good hands (the specific council), and training is taken care of by Dr. Ibrahim Helmy Abdel Rahman. For the first time, LE 50 million was requested for the issues of the labor force and training in Egypt. He then added that among the basic issues that now face Egypt are the following:

. Low production rates, especially agricultural production, which results in hunger.

. Unemployment and the inefficiency of utilyzing the labor force.

. Emigration from the rural to urban areas and from Egypt to other countries.

Then he pointed out that the issue of reconstruction is an issue of production in the first place. It is necessary to have a clear reconstruction strategy in front of the decision maker. It is also necessary to construct a data bank to record all studies and experiments that have been performed in the field, besides the experiments that were performed abroad, and to

have the data at the disposal of research personnel.

The opening ceremony was followed by three working session.

The first session was assigned for the research projects of the department of environment. The second session was assigned to the research projects of the department of resources. The third session was for issuing the recommendations of the convention.

Important points that were discussed:

. A suggestion to have the reconstruction strategy be one of issues of the plan of the council. The working paper prepared by the academy in that respect should be studied.

. A suggestion to add the following two research projects to the research plan of the countil of new communiities:

- To evaluate the experiment of new communities, to identify the problems that face them, and to suggest suitable solutions.

- To formulate a national policy for the replanning of old suburbs in existing cities.

. To benefit from results of the following studies that were performed by the family control agency: The first was the study performed on the inhabitants of El Mehalla El Kobra after the construction of the spinning and weaving company. The second study was the one performed on the inhabitants of Nag Hammadi after the construction of the aluminum complex.

. The five year plan should include the following:

- Quick projects to cover the national development plan.

- Basic research projects related to the development of society. Past achievements should be analyzed and points of weakness should be identified.

. Duplication in research projects should be avoided in order to eliminate extra efforts and expenses.

. To review the required rates of potable water.

. A suggestion was presented to change the name of the specific council to the specific council for reconstruction research.

. To benefit from new communities that have already been constructed.

. There should be many exes to the formation of new communities, i.e., industrial axis - agricultural axis - housing axis - and strategic axis, in addition to creating centers of attraction for these communities.

Recommendations of the Convention:

* To prepare for holding a convention to formulate the strategy for new communities and to discuss the reconstruction strategy.

* Projects should stem from actual experience obtained, in addition to the issues raised in the convention (which were labeled characteristics of new communities), especially during the beginning and growing stages of a new community. These characteristics include human, social, financial, and engineering which cover the strategy of development.

* To separate the strategy of reconstruction from the political line. In other words, the reconstruction strategy should have a stable, scientific basis.

* The following agencies will participate in the new studies:

National Planning Institute, Urban Planning Authority, Ministry of Industry, Village Development Agency, and Family and Housing Agency.

* The research stages should include the following:

- Data collection and data analysis.
- Quick suggestions to show the main directions.
- Detailed research

It is necessary to quickly establish the data bank center in order to maintain the information collected in the field of reconstruction.

9. Convention of the Specific Council for Management and Economic Sciences Research.

The council did not hold its annual convention.

10. Convention for Specific Council about Social Sciences and Population Research.

The convention was held in the national center for social and criminal research on Tuesday, November 11, 1982. Invited to the convention were: some Cabinet members, members of the specific councils, University professors and research personnel working in the fields of social sciences and population. Dr. Amal Osman, Minister of Social Affairs and Insurance, and General Hassan Abu Basha, Minister of the Interior, attended the convention.

First:

** Dr. Ahmed Mohamed Khalifa opened the convention with his speech. In his speech he welcomed the personnel attending the convention. He mentioned that this convention was the third convention for the council and it was being held four years after the previous one, which was held in 1978. He said that the reason for that was that the specific council of social sciences was cancelled in the late Seventies because of the shrinking attitude of the academy then. The council was re-activated when the academy realized, in its new era, the importance of social sciences in treating the problems of the Egyptian people. With the return of the Social Sciences Council, came another council, the New Communities, whose activities integrate the activities of the Specific Council for Social Sciences.

He then talked about the issue of social science, personnel working iq that field in Egypt, and social studies that are performed by foreign establishments and foreign research personnel. He stressed the importance of the independence of the research personnel and not to let them fall into any foreign temptations in order that their treatment of social problems

would stem only from a scientific and national perspective. He said that he was not against foreign financing of social research work. However, it should be controlled. He added that it looks like the academy will be able to finance all the suggested research for the council. He suggested formulating a code for professional ethics to be followed by all personnel working in the field.

He concluded his speech by mentioning the objective of holding the convention. He said it was to discuss the research plan to be performed by the council in the following five years. He added that these plans are subject to modifications within the suggested budgets. He wished the convention success.

** The following points were stressed in the speech of General Hassan Abou Basha, Minister of the Interior:

He praised the plan and added that social development is affected to a great extent by the quick developments that are currently taking place (whether political or economical, including the open door policy). The duties of research include both identifying and forecasting those changes. He said that society still needs further studies on the treatment of the problems of pollution, and the adverse effects of the social and economic changes on the status of security and on crime.

He then presented to the convention a subject for research and study to be added to the plan. The subject is the phenomenon of "violence and terrorism".

The police force tried to face the extremists with debates. However, the problem still needs more scientific research.

He concluded that scientific research can impose itself on the national working pattern when it addresses itself to reality and practicality and when it presents feasible solutions to problems.

** In the speech of the Minister of Health, delivered by Dr. Mohamed Saad Eldeen Fouad, the First Deputy to the Minister, the following was presented:

To concentrate on the present efforts being carried out by the Ministry concerning the services of the family planning agency, since the continuation of population increase will hinder the development efforts. The Ministry is working on the creation of able cadres of doctors and technicians who can implement the national family planning program which is within the "development and population project" being implemented in some governorates.

He then pointed out the importance of both the different economic and social factors that directly affect human behavior, and the acceptance of the population of the concept of family planning.

This calls for intensifying the efforts and cooperation of all agencies. The ministry - with the capacity of all its available resources - is willing to participate and to furnish the necessary equipment for this research.

** Then Dr. Ibrahim Badran, President of the Academy, delivered his speech in which he pointed out the following:

- That the academy paid special attention to social and population studies and research work. The academy reinstated the concerned specific council which is made up of a group of chosen experts in the field. The experts will lay the foundation for future policies.

- The five year plan stems from the source of the problem, which is, mankind.

- The challenge of the present era and the great speed of progress and scientific and technological development has created a number of new fields of specialization.

- The challenges that face Egypt in the present time can be summarized in the following points:

  - Challenges imposed by peace.

  . An increasing rate of education whose return, effects,

reflections, and changes in style should be studied in every educational stage and within each environment.

- An open door economic policy which "imported" progress and which reflected a great difference in consumption capacities. Besides, it showed that it is difficult to have both hunger and greed existing together.

- Ambitious young generations living in a small world in light of advanced radio communications. Hence, the young generations are split between the society they live in and the other societies of the world.

- An increase in population with increasing prices combined with world pressures, both economical and political.

- That the mind, philosophy, science, and research are the means which the whole world uses today for solving current problems.

- That human technological and scientific progress are aimed at fulfilling the happiness of both the individual and the family.

- That individuals have to transfer technological (and scientific) progress to personal development for themselves, their families, and their societies. In the meantime, individuals have to maintain their values, beliefs, family ties, and their psychological balance. In other words, man is the axis of progress, regardless of the increase in production.

Second:Discussions that took place in the first two working sessions.

Dr. Ahmed Khalifa, President of the convention, lead the debate and the discussion, commented on them, and answered some of the questions presented from the floor. The deputy of the academy's president for the affairs of the specific councils answered some of the questions concerning the style of operation for some suggested research projects.

Among the participants in the discussion were: Dr. Sayed Oais, Dr. Imam Selim, Dr. Mohamed Seef ElDeen Fahmy, Dr. Nahed Saleh, Dr. Abdel Hadi Algohary, Dr. Salah Kansoah, Mr. Aly Fahmy, and Dr. Zeen Elabdeen Darwish.

The discussion included the following:

. The profession of social scientific research, the ethics of the profession, and the nationalistic character of the profession. It cannot either be imported or exported with the necessity of regulating financing procedures from foreign sources. It is proposed that a committee should be formed to draft the constitution of work in that area. Also, it is suggested to hold a convention to dicsucc the issue of research legislation.

. The importance of clarifying the concepts since the country started with planning and not with development to which planning is a tool. Besides, the country followed expenditure while stressing to offer it. Hence, there is no clear future picture to assist the planner in planning for development. It is, therefore, necessary to formulate a national strategy from which stem all five year plans and other long range plans. Since it takes a long time and much effort to formulate such a strategy, it is suggested having the five year plan for social research go hand in hand with formulating such a strategy because of the stressing urgency of the research work and the impossibility of postponing it.

. There has to be coordination between research agencies which work in the education fields, and the specific council for social sciences and population. It is necessary to concentrate on the effect of education on the Egyptian student in different educations stages. Also, it is necessary to study the effect of both educational and economic policies (and others) on the educational process on one hand, and on the Egyptians on the other hand.

. The extent to which society is ready for the era of an information revolution as a continuous development of the technological era. It is important to concentrate on: documenting, keeping, storing, and retrieving information in an orderly scientific manner.

. It was suggested that the national center for social research be considered as a consulting center for social development on the national level.

. The necessity to direct scientific research to the research proper and not to surveying. The suggested social research plan cannot be done on an individual basis, or as academic research for Masters of Ph. D. degrees. Only national research establishments can perform such a job.

. The program should be executed according to priorities, with concentration on general research subjects and broad research programs in such a manner as to make it possible to look at them from different points of view and different specializations in a coordinated and integrated way. In other words, concentration should be on the subject rather than on the specialization, keeping in mind the importance of research on social change, action, evaluation, follow-up, and adaptability.

. The importance of giving the chance to all academic and research agencies to participate in implementing this plan, and suggesting the most suitable way of implementation. The scientific details of the research should be left to the research agency that will perform it.

. The issue of the relation between academic personnel and executing personnel and many recommendations that were not followed. It is quite important to have the results reach the executing personnel with all different possible means. A suggestion was presented to hold either a convention or a symposium to discuss the issue of benefiting from results of social research work.

. The absence of cooperation, coordination and communication between different research agencies in the social field allows foreign intervention both in financing the research and participating in research. This takes place because there is no agency (or agencies) that perform the job of surveillance, follow-up and coordinating research work. It was suggested

to have the specific council for social and population research perform those functions on the national level.

. To reconsider the feasibility of the population studies and population research, and to reevaluate their results. It was suggested to put more interest in research work concerning the re-distribution of population, and development of new communities instead of concentrating on issues that do not solve the population problems in Egypt.

Third:

The convention's recommendations.

The convention approved the research projects included in the five year plan for the specific council for social sceinces and population. The convention recommended implementing the projects according to the following considerations:

a. The needs of both the country and the plan.

- The priorities that the council determines for projects.
- Projects that are a continuation of previous, social studies or projects that will help benefit from previous results.
- Projects that will help identify the future status of the society.

b. To pay attention to both the coordination and integration between different research projects of the plan.

c. To treat the research projects as integrated subjects or programs (regardless of the details mentioned in the plan) that can be studied, partly or totally, by the different specializations represented by the departments of the council.

d. The council has to take all necessary actions that will help identify the detials of the research projects of the plan, such as their volume of finance, their targets, and how they are going to be implemented

on the national level. This will help the scientific authorities, the academic authorities, and concerned personnel participate in their implementation. The council can cooperate with the academy's agencies in doing that.

* The council suggests holding a convention or a symposium that will be devoted to discussing the issues of financing, legislation, and the code of ethics of the social sciences profession.

* To take necessary actions that will help to have the results of social research reach agencies concerned with planning and execution, and the legislative bodies in the country which will promote the performance of those agencies and result in the desired coordination between theory and practice.

* To pay attention to the coordination and integration between different research agencies and research personnel performing research work on one subject or one program in the plan.

* To pay attention to the documentation of the social research, studies, and data on the national level, and to study the feasibility of forming a bank for social data to be supervised by the council in cooperation with the agencies of the academy. The bank will present its services to individuals and concerned agencies - including planning and executing agencies - in the suitable scientific manner.

* To pay attention to scientific communication, both locally and internationally, including coordination with concerned agencies through national and international conventions.

11. Convention of the Specific Council for Basic Sciences Research.

The fourth annual convention for the council was held on Wednesday, June 16, 1982, in the convention hall in the technological planning and development research center - Cairo University.

The program of the convention included the speeches in the opening ceremony.

** Dr. Mohamed Tolba Ewida, Director of Zagazig University and the Chairman of the Basic Sciences Sector in the Higher Council of Universities, stressed - in his speech - the need of supporting the sector of basic sciences by responsible personnel in that sector - being the infrastructure of scientific progress. He pointed out that research in Egypt, in the beginning of this century, depended mainly upon individuals and not on team research. He priased the academy for being the first organization to encourage scientists and researchers in team work. He then requested faculties of sciences to develop a new fashion of research work that depends on a group of scientists rather than on one scientist.

In his speech, he further stressed the importance of formulating a plan that ties between research carried out by the specific council and the problems of development, and looking for ways and means to provide a healthy and scientific climate for the research worker in order to be able to give generously to the country.

** Then Dr. Ibrahim Badran, President of the Academy, delivered his speech in which he summarized the role of the academy and the duties of the specific councils and their conventions in the future stage. He repeated the importance of contacts and communication between different scientific sources in universities and institutes and between the research centers in the academy. He explained how the academy, in its structure, is prepared to carry out that function through the formation of the scientific communication sector. This sector is concerned with communications with the universities, local governing authorities, production units, and service units.

He then talked about the issue of data and how data has developed into a basic science which depends on statistics, mathematics, and library science and the importance of formulating a national data network to serve research workers in all fields. This, he concluded, will help the issue of development

a great deal.

. Then Dr. Mahmoud Hafez Ibrahim, Chairman of the Council, delivered his speech in which he stressed the role of basic sciences in the progress of mankind, all the way from ancient times through the industrial revolution era, and to the space age. He then pointed out that the basic sciences in Egypt performed their role for half a century since the establishment of the mother university, and until the present time. Five departments were formed from the council. They are: environment; chemistry; geology; physics and mathematics; and biology. These departments have more than one hundred of the best scientists and research personnel. He then mentioned the achievements made by the council since it was established in 1972: tens of subjective research works in universities and research centers; studies to establish institutes and research units in the areas of advanced sciences and preparing the necessary cadres for them; contracts to perform research projects that serve society and which agree with the national development plan (40) - half of which are finished and the other half are still going on - supported by the academy - and the support of helping activities, such as scientific publications and holding symposiums and conventions.

The first working session included the achievements of the council and a review of previous studies (that are completed) and current studies. Two working sessions were assigned for discussing the plan of the council which are divided as follows:

. Some national projects such as establishing a national network of earthquake detecting stations.

. Studies concerning continuing some research work currently being performed in universities.

. Feasibility studies for some new institutes.

. To participate in furnishing some centers and units, such as the clinical chemistry unit.

. To support some research projects and new scientific fields.

. To increase the support for some research projects and scientific fields in the council.

. To encourage and to support projects with high priorities that aid national development.

. Some supporting activities, such as making the bibliography

Detailed discussed was addressed to subjects related to the structure of basic sciences in Egypt, such as: the present status of the research worker; ways to improve the performance of research personnel, supporting the infrastructure of scientific research; paying more attention to supporting activities, such as publication; limiting the number of personnel on leaves of absence; putting the scientific societies under the academy instead of the Ministry of Social Affairs; and passing a resolution to allocate 1% of the budget of each project towards publications.

Recommendations of the convention:

First: Concerning the five year plan:

* To approve the continuation of the current projects; to approve support needed for them; and to approve the suggested new projects in the five year plan.

Second: Concerning working conditions and resources available for scientific research, such as: preparing research workers and the cadres in different fields through establishing scientific distinction centers for institutes to be formed in the future (within the five year plan 1982 - 1987).

* To limit the number of research personnel to be granted leaves of absence, while rewarding them with higher pay to increase their interest in working on the plans. This will guarantee the continuation of the research plan.

* To put more interest in raising the standard of research personnel.

* To raise the standard of research assistants (technicians), and to establish schools and institutes for graduating them.

Third: Concerning scientific publications:

* To form a committee from members of the council, members of publications committee in the academy, and representatives from the science union and the higher council of universities to study the subject and to figure out means for improving the status of publications.

* To have scientific magazines published by different universities supervised by the higher council of universities in order to raise the standards and to formulate an constitution for the magazines.

* To review the issue of raising the aid given by the academy for scientific societies in order to have those societies perform their duties in the best possible manner.

* To pay more attention to evaluating research work to be published in scientific magazines. This will help in the exchange of magazines with foreign societies.

* To take necessary action to issue laws concerning the conditions to be fulfilled when issuing a scientific magazine and to allocate 1% of the decided budget for any project for publishing purposes.

* To publish booklets for simplifying ideas of science to help stress the role of scientific research in solving national problems, which in turn will create understanding - among the masses - as to the importance of the role of scientific research.

Fourth: General Recommendations:

* To establish a national institute of geophysics and an institute for astronomy. This can be done through developing the existing facilities in the Institute of Geophysical and Astronomical Records in Helwan.

* To have the scientific societies under the control of the academy instead of the Ministry of Social Affairs.

* To have the national projects well advertised in order to seek financing for them from different sources.

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