

INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

MIDDLE EAST AND NORTH AFRICA

REGIONAL OFFICE

I D R C T R A I N I N G S T U D Y

EGYPT: 1973 - 79



TABLE OF CONTENTS

	<u>Page</u>
I PREFACE.....	1
II NATIONAL OVERVIEW.....	3
III INTERVIEWEES RELATED TO PROJECTS, AND INSTITUTIONAL ANALYSIS	
73-0010 Sorghum, Millet & Legumes (ALAD)	
General Institution - Dr Dessouki.....	33
Project Leader - Mr el Ghorr.....	39
Trainees - Messrs Bashir & el Attar.....	44
77-0073 Food Legume Improvement	
General Institution-Dr Dessouki.....	45
Project Leader-Dr Nasseeb.....	46
Trainee-Dr Khalil.....	48
Institutional Analysis-ARC.....	51
75-0130 AGRIS	
General Institution-Messrs Mina & Ibrahim.....	54
Project Leaders-Messrs Mina & Ibrahim.....	57
Trainees-Messrs Ibrahim-Andarawis-Bayoumy-Ali- Ayyashi-Hady.....	61
Institutional Analysis- EDICA.....	73
75-0048 Casuarina	
General Institution-Dr Shazly.....	76
Project Leader-Dr Badran.....	81
Trainee-Dr Lakkany.....	82
76-0074 By-Products	
General Institution-Dr Shazly.....	85
Trainees-Dr Abaza- Dr Nour.....	86
Institutional Analysis - Faculty of Agriculture, Alexandria University.....	90
77-0035 Aquaculture	
General Institution - Dr Latif.....	93
Project Leader - Dr Ishak.....	98
Trainees - Messrs Mostafa - Sa'ied - Badawi - Shazly.....	101
Institutional Analysis - IOF.....	107

	<u>Page</u>
IV INTERVIEWEES RELATED TO FELLOWSHIPS	
74-6050-05 Adult Education - Dr Youssif.....	110
75-6050-13 Mobility & Identity in an Egyptian Town - Dr al Messiri.....	116
76-0155-02 Nitrogen Fixation - Dr Halafawi.....	119
76-6050-14 Mass Media & Social Changes General Institution - Mr Al Mahy.....	124
Trainee - Mr Farag.....	128
77-6050-04 Production Economics & Farm Management - Dr Khalifa.....	131
78-6050-09 Research Training in Pesticide Hazards-Dr Bakry.....	136
V COUNTRY ANALYSIS AND RECOMMENDATIONS.....	140
VI REFERENCES.....	150

P R E F A C E

This study on research training is one of a series conducted by IDRC in a number of less developed countries. Its aim is to review the nature of research training in Egypt generally, and the effort supported by IDRC in particular over the past decade. This survey also included a study of the adequacy and the impact of research training on the trainee and his institution.

On the basis of the findings, the researchers sought the views of the interviewees --institutional heads, leaders of IDRC-supported projects, and trainees-- as to directions they would recommend the Centre's research training program might take over the next decade.

The authors wish to express their appreciation to the institutional officials, project leaders and trainees for taking time out for the interviews. Earlier in the study Dr. Abdul Rahman Basayouni, Administrative Officer of IDRC's Regional Office in Cairo, also contributed to the study as one of the team who interviewed prominent Egyptians, scientists and educators. These findings are summarized in Section II of this Report.

J.K. Friessen, Coordinator

M.M. Hafez, Consultant

Cairo

30 June, 1980.

II NATIONAL OVERVIEW

I. NATIONAL OVERVIEW

Some Development Indicators

Research training occurs within the context of a country's existing stage of growth. It may, therefore, be useful briefly to cite a few indicators which reveal Egypt's present level of development.

a. Some Demographic Data

Egypt's burgeoning population, much of it in a crowded urban environment, reflects the country's general status among the less developed countries (LDCs). Egypt is, in fact, very close to the average indicator rates for LDCs as a whole. (World Population Data Sheet. Population Data Sheet. Population Reference Bureau, Washington, D.C. 1979). Here are a few examples, with the LDCs' average in brackets:-

Population: 40.6 million

Population by the year 2000: 63.5 million

Birth rate: 38 (33)

Death rate: 12 (12)

Population growth rate: 2.6% (2.1%)

Number of years to double: 27 (33)

Infant mortality: 108 (107) Life expectancy: 55 (56)

Urban population: 44% (28%)

Physical quality of life index: 44(55). This PQLI combines

infant mortality, life expectancy and literacy

Per capita GNP: US\$ 310. (about the same as the Sudan and

Indonesia)

Several of these statistics invite comment; for example, some need to be understood against the background of several decades of huge military expenditure and intermittent war. The population growth rate of 0.5% above the average LDC rate, shows^a significant difference. Urban growth too, in view of Egypt's very limited agricultural belt, is unusually high. Egypt's composite PQLI is 20% lower than the LDCs' average. Finally, Egypt's per capita GNP of US\$ 310 ranks higher than the world's least developed countries, but is well below such countries in the region as Morocco, Tunisia, Jordan, Syria and even Yemen.

b. Agriculture

The agricultural sector plays a major role in the structure of the national economy, for the reason that the agricultural production is closely connected with the livelihood of people, and it represents as well the source of income for the majority of population. Furthermore, the exportation of agricultural products occupies a prominent place in the foreign trade of Egypt. Accordingly, the Government took it upon itself to consolidate that sector aiming at effecting a horizontal expansion through the increase of

the area under the plough, as well as a perpendicular expansion through the augmentation of the yield of the cultivated area.

The gross total of the areas which have been reclaimed and brought under the plough in the period from 1961 up to 1978 amounted to 835.6 thousand feddans compared to approximately 78.9 thousand feddans in the period from 1972 up to 1960. The total cultivated areas in the Agricultural Year 1978 is given as 11.148 million feddans.

c. Industry

Egypt has made great achievements in the field of the traditional industries, namely, spinning and weaving as well as in the field of modern ones, such as the engineering, metallurgical and chemical industries. The State contributed to a most efficient drive towards increasing production in many industries, as for instance the iron and steel, ceramics and porcelain, cement, paper, fertilizers, spinning and weaving, and petroleum industries.

The following table gives the values of industrial output in the last few years compared with those in 1952:

(L.E. million-At Current Prices)

Sector	1952	1976	1977	1978
1. Petroleum Industries	34.2	574.9	696	794
2. Mining	3.6	23.0	27	30
3. Chemicals and Pharmaceu- ticals	20.5	296.0	366	391
4. Food Industries	122.3	778.0	871	977
5. Engineering and Electrical Industries	30.1	447.0	554	646
6. Spinning and Weaving Industries	84.6	757.0	837	1095

d. Social Affairs

The State shoulders the responsibility of deepening the feeling of social solidarity among citizens, solving the problems facing them and gratifying their needs so as to secure justice among them. In pursuance of this objective certain achievements have been accomplished which can be summed up in the following:

- Raising the living standard of the rural community.
- Construction of rural social units to extend services to the greatest number of the rural community.
- Securing social insurance allocations.
- Setting up vocational training centres for extending services to disabled persons.

- Establishing Family Consultation and Guidance Bureaux to be affiliated to courts of probate, to tackle the affairs and problems of families in trouble or difficulty.

e. Education

Since education is an indisputable right of which masses should never be deprived, as well as a solid foundation for any political, social or economic structure, the State has adopted the following policy:

- Resorting to the scientific planning as a base for development with a view to form scientifically skilled man-power.
- Broadening the base of education and enriching it with more depth.
- Securing the right of every citizen to free education at all stages.
- Considering education as part and parcel of the Government's policy for raising the standard of living and promoting the national income.

f. Economy

Economic planning aims at the following, amongst other things:

- Providing the solutions ensuring an increase in

national income that exceeds the natural growth of the ever-increasing population.

- Widening the scope of heavy industries being the mainstay on which economy is based, besides horizontally and vertically expanding agriculture.
- Expanding commercial exchange with foreign countries and opening new markets.
- Ensuring full employment and eradicating unemployment, especially masked unemployment.

The following gives the development of National Disposal Income (At current prices - L.E. million)

	1972	1976	1977
Gross National Disposal Income:			
G.N.P.	3403.0	6117.7	7139.1
Transfer from rest of the world	131.0	303.6	501.9
Disbursement:			
Individual Consumption	2237.0	3863.4	4505.0
Collective Consumption	905.0	1570.9	1576.0
Total	3142.0	5434.3	6081.0
Savings	392.0	987.0	1560.0

1.1- Nature of Research Capability in Egypt

Our interviewees were generally of the opinion that Egypt enjoys a high degree of research capability when compared with the majority of less developed countries, and certainly so in the Middle East region. In 1977 the research investment was estimated to be 0.8% of GNP, or US\$ 2.20 per capita. In 1976 it had risen slightly to \$2.37 per capita.

The staff numbers in the various research agencies is impressive. According to the Academy of Scientific Research and Technology, in 1978 Egyptian university graduates now living numbered 700,000.

The numbers directly involved in major areas of research are as follows:

Areas of Research	Numbers of Personnel Involved			Total	%
	Ph.D.	M.Sc.	B.Sc.		
Food & Agriculture	2690	2213	5380	10283	41.9
Industry	870	638	1023	2531	10.3
Housing and Construction	282	157	606	1045	4.3
Transport and Communication	175	149	425	749	3.0
Energy & Natural Resources	735	584	1426	2745	11.2
Health, Medicine & Environment	2692	1871	2634	7197	29.3
Totals	7444	5612	11494	24550	100.0

These numbers are distributed among various teaching, training and research institutions which comprise, in general, the following:

a) 12 Universities which include:

- 156 colleges
- 7 centres

b) 1 Academy of Scientific Research and Technology to which the following scientific research bodies are affiliated:

- 1 interdisciplinary research centre
- 3 service centres
- 6 research institutes

c) 14 Ministries which include the following scientific bodies:

- 40 institutes
- 30 centres
- 25 departments and laboratories
- 5 others

To single out one of the major bodies, the National Research Centre, its research staff consists of:

- 700 Ph.D.s
- 300 M.Sc.s
- 600 B.Sc.s

conducts
The NRC/quality research in the high priority areas for development: technology transfer, agriculture and nutrition, health & environment, natural resources and energy. It enjoys wide contacts with scientists and agencies in many countries.

The research personnel strength of such bodies as the Institute of National Planning and the Academy of SRT is equally impressive. Some of the research centres, for example The Water Research Centre, has 10 specialized institutes, with^{the}entire organization funded by the Ministry of Irrigation. The Agricultural Research Centre comprises 11 separate research divisions and a network of three major and a number of small field research stations throughout Egypt.

In addition Egyptians have for decades trained research personnel and other professionals for much of the Middle East region and for some African countries as well. In recent years 7000 students from the Middle East - in engineering, economics and commerce alone - annually enrol in Egyptian universities. Many were supported by Egyptian fellowships but recently the Arab States have provided substantial student grants.

Not all is rosy, however, with respect to quality of research. Criticism touches on the large classes at universities where teaching is of course a heavy competitor to research commitment.

Frequently heard was the observation that Egypt has the researchers but lacks the ability to utilize the best ones. One expatriate administrator was very critical: " I am very skeptical of Egypt's research capability. The infrastructure and the administration are generally too weak to handle substantial research inputs."

In his "Science and Scientific Policy in the Arab World", A. Zahlan refers to the exceptionally extensive scientific manpower in some Arab countries. During World War II, he maintains, it even exceeded that of Britain and Japan in number. What was its achievement? Little if anything, compared with that of U.S., Britain or Japan, Zahlan concludes.

Hence, there is on the one hand an unqualified opinion among most that Egypt has enough researchers, and on the other hand a skepticism of the efficiency in much of the research.

1.2- Shortages/Excesses of Skilled Professionals

On the basis of relatively large numbers of university graduates and the pool of general and specialized researchers, our interviewees invariably responded that few if any shortages exist of skilled research professionals. Temporary shortages were usually filled by

professionals from other departments until the jobs are completed.

On closer look at this question the respondents singled out several from specific shortage areas:

A- Technicians - ranging from light to acute short supply, with most comments relating the shortage as fairly serious. Related to it is the inadequate provision of research equipment and libraries. One concluded that the research jobs were over-balanced on salaries and underfinanced on facilities.

With reference to students in their earlier school years, the problem of Egypt, common to many countries, is one of mistaken choice of curriculum in high school and post high school years. Higher education is free, say the parents, so why should my children not enjoy the prestigious benefits of the academic degree? Hence, the B.A.s and even some M.A.s finally finish as taxi drivers, waiters and other jobs far below their so-called academic training and totally unrelated to it. But the picture is changing. More young people are gauging the employment pattern of the future. The State too has increased facilities for technology education.

B- Technologists - The President of the Academy of Scientific Research and Technology stressed the

shortage of local technologists. Egypt has always depended mainly on foreign technologists and transferred technologies. We have to concentrate on the creation of technologists to suit our needs and our society. This requires a 5-10 year plan to create a cadre of high calibre technologists who can train others. They should be properly oriented before going abroad, to be well aware of their nation's needs. IDRC can help in the creation of such cadre of technologists.

C- Management - Indicated was the field as a whole and research management in particular. This was repeatedly pointed to as a major lack in manpower. In universities the subject of management has in recent years come to be an added academic area in commerce, but as one comment had it, "In the past we graduated faculty members, not research workers. This traditional curriculum is not practical for development and does little for management in Government and in the market place. We need now to train researchers".

The most senior directors of research organizations stressed that the entire effort in research in Egypt since its inception depended to a large extent for its success - politically and bureaucratically - on

the capacity to manage it; thus research management was a primary development need. The alternative was the earlier and often current practice of "magnificent isolation" in research work, often selected and conducted solely by the individual, hence its resulting lack of planning and waste.

D- Social Sciences - among which economics was mentioned in particular. One respondent singled out agricultural economics^{es}/an area of serious research shortage. He felt this subject had never received the attention in national development it urgently required; hence to this day, he regretted, "there is still no respectable M.Sc. program in agricultural economics". Among the professional fields in short supply are rural and urban planning, including housing, engineering (electronic energy), the new biology, etc. The whole professional complex for the future requires a major thrust in comprehensive technical research.

Multi-disciplinary research was considered an essential methodology for Egypt although barely introduced anywhere. Over-specialization could actually result in a handicap in development research. The multi-disciplinary concept, we were told, was a Western "import" and one to be commended. What

they termed their pioneer effort, the National Research Centre has embarked on an extensive project in comprehensive rural development. Several other agencies expressed the need for research in integrated development.

As to a surplus in professional manpower groups, mention has already been made of the continuing mushrooming of arts graduates for whom this degree holds little qualification for jobs Egypt has to offer.

Egypt is an impressively productive teacher and exporter of professionals, especially to the Arab World, and it has been filling this need for many years. It is estimated that 30% of Egyptians who have completed higher education emigrate. About 10% of graduates going abroad for training do not return. Today, more than ever before, the Gulf States beckon with large salaries and good working conditions; so away go Egyptian workers by the several millions, and professionals—some of Egypt's best—by the thousands. The Government limits these émigrés to four years abroad.

To summarize, technologists and technicians are a cadre definitely in short supply. For the present social and economic requirements of the country, arts graduates are excessive. Library resources and other

research facilities need expanding. A glaring shortage is seen in management research. The social sciences, both as academic and as applied professional fields, are gaps in manpower training, as is also multi-disciplinary research. Lastly there is the Egyptian phenomenon of emigrating unskilled, semi-skilled, skilled and professional personnel, in huge numbers, to the Gulf States as well as to neighboring Middle East countries.

1.3 Egypt's Policies on Research

In understanding the present stage of research policy development in Egypt, one needs to review quickly what has gone before. As we were repeatedly informed, the several national plans are thin on specific research provisions and planning. This is also the case for the current 1978-82 and its updated 1980 version. So, one must look elsewhere for more substance.

Where the industrialized world, by the mid-century, was reaping the benefits of advanced scientific and technological research

inputs through substantial material and social progress, Egypt had not yet seriously applied itself to research, and technology was at the same unexplored stage.

In the late 50's however, the Science Council was set up with strong mandate to initiate planning and management. The Council tackled its task with vigor. Six sections were set up for research consideration in major physical and medical sciences. Some 117 new topics related to national development were selected for research exploration, including provisions for training at home and abroad. Approved for research was £8.5 million and an additional £ 3 million for training.

Alas, this brave experiment in research organization lasted only a few years. It was superseded by a Ministry of Scientific Research from which eventually emerged the Academy of Scientific Research and Technology.

The Academy's functions were to be a coordinating one and an executing agency of research bearing on national problems.

The 14 specialized research councils were set up initially to formulate research proposals from ministries and various institutions and then to conduct studies on a priority list. They considered 70

national projects.

Today the Academy is involved in 120 projects on a budget of L.E.2.5 million out of a national research budget of L.E. 40 million. This is augmented by L.E.

6 million provided by external agencies.

In its short history, the Academy, under its current dynamic president Dr. Hassan Ismail, is making considerable headway in national coordination, building a network of agencies that consult with each other, and introducing or expanding the social sciences in research.

The Academy is also aware of such problems as low salaries in government research institutions; e.g. L.E. 150 is not uncommon for a PhD researcher.

The Academy is trying to raise the present scale two or three times.

As regards the universities, their research remains primarily academic, the traditional role of higher education. At their inception the more recent provincial universities were challenged to identify more with the immediate surroundings, and its problems and opportunities, than with the older urban institutions. The former do not seem to have accomplished this aim preferring to hold to the more advanced parent

institutions as their model. Directors of several research agencies expressed regret over this situation, observing that national development cannot be accomplished without increasing research, and encouraging closer links between community and the social and physical university laboratory.

Lacking any clearly formulated national plan, improving research capacity today is left to individual institutions although the Academy and several of the extensive research bodies and universities reflect an implicit need and effort in research training and research management.

In conclusion, one can say that Egypt has large research cadres and that it can today count on a limited number of centres of excellence. What then is missing?

A leading scientist emphasized three requirements:

- a) an overall national development plan,
- b) based on this, a national research and training plan,
- c) last but by no means least, down-to-earth management to demonstrate to policy makers that people can work together for the common good.

1.4- How to Build up Research Manpower

Egypt can point to her large supply of researchers as a promising asset for development. Reference has

already been made to certain deficit specializations. Now the quality of researchers and hence their training-or often the lack of it-calls for serious discussion and action.

The country is in the throes of what, following a world war, Churchill once referred to as "a raging peace". One observes the present enormous input of external assistance in many areas of development. Direct material aid, including technical help, is a relatively uncomplicated matter when compared with planning and carrying out aid programs in training for research. The plethora of aid agencies and the wave of assistance surging in on Egypt could actually cripple rather than advance research in the welter of confused priorities and the lack of a well formulated research development plan.

The components of external aid for research change from day to day due in part to political factors. On the whole, however, it is the familiar traditional assistance pattern: scholarships to universities, with rather more recipients today obtaining in-country training; the same for government and private sector training activities; additionally, shorter courses and conferences at home, regionally and abroad.

New directions are being established in training, such as that of the up-to-date and well-balanced curriculum and directorship of the Development Research and Technological Planning Centre. Once again, the Academy of Scientific Research and Technology is demonstrating:

- a) that it has competent senior officials and an operative policy Council;
- b) that team work of scientists - clusters of research - can be achieved;
- c) that agencies will cooperate if management is judicious;
- d) that, lacking a national plan, the Academy can at least formulate a framework for national research development and set up its priorities.

1.5- Can Egypt Meet its Future Requirements in Research Manpower

There was much hesitation among our interviewees in responding to this question. Most felt that, over a five-year period, Egypt would be able to fill its needs in research manpower, conditional upon achieving quality as well as numbers. Few hazarded a guess beyond the five-year period.

Reference was made to a study titled "Scientific Needs for Egypt Until the Year 2000". The paper strikes one

as overly ambitious and under-documented and the findings therefore rather conjectural. But Younis, Mahmoud and Hussein touch on some significant problems - the lack of a reliable information getting body in science and technology; large enrolments in higher education, but too few scientific personnel and irregularly distributed; the meagre national expenditure for R & D; and lastly, the primary importance of agriculture not matched by an equivalent effort in its R & D.

The authors then offer these recommendations:-

- a) The level and growth of gross R & D expenditure should be raised.
- b) As business conducts and funds a good share of R & D activities, the government should encourage this supportive research sector.
- c) The weak collaboration between universities and the productive sector of the economy needs correcting if this cooperation is to progress well beyond the past stage.

1.6- Type of Training Most Needed

A social scientist struck hard at the blocks he saw in research training:

- Much fragmentation in research instead of a plan,

- hence the need to conceptualize research in program form rather than as individual projects;
- methodology weak, even elementary, with little effort to tie in to an existing body of knowledge;
 - an obvious need to relate research to policy issues;
 - a lack in ability and limited means to publish and otherwise disseminate research findings.

Respondents to this either/or set of questions disagreed on desired academic training in particular as well as on other types of recommended training. The PhD came in for criticism - there were too many in relation to other categories. The advanced Egyptian degree was also frequently lacking in quality. The scramble among bureaucrats for the PhD degree was frowned on.

Who then was to be trained? "What Egyptian Research and Development requires is not more PhDs but better trained researchers, especially at the middle and lower echelon". In planning training for the staff as a unit, one should recognize that the research assistant is a key person in the program and hence must be equipped to perform his tasks - how to interview, how to organize field

situations, etc. In recognizing the larger social goal in development, several respondents mentioned the need for a drastic change in the trainee's outlook - in health research to see it not fragmented but as a 'gestalt' in community health; or in agriculture to move away from the image of a government agent and adopt instead the role of a community agent.

At the senior training levels, research management is an essential yet often weak or missing component. Moreover, in such courses it should be recognized that the participants must be, in the main, not administrators but researchers who are themselves familiar with all aspects of research activities.

Should training abroad be encouraged? The best minds should have this opportunity, it seemed agreed, both for academic training and, from time to time, for specialized continuing education. An interesting opinion was this: that the hurly burly and interruptions in the Egyptian classroom or office were hardly conducive to concentrated study; that the top professional needs to go abroad often simply to find desired seclusion for research and to learn "the importance of time".

Tying in the training to the project was endorsed enthusiastically by the natural sciences respondents,

but its value somewhat qualified by the social scientist. The former felt tied-in training improved the project's importance to the institution, gave greater assurance to continuity beyond the life of the project and avoided planless and isolated activity.

On-the-job training was also repeatedly recommended, as was in-country and regional training. In fact all of these were preferred as more economical (than training abroad) and in providing an indigenous environment.

A summary review of this topic would suggest:

- a) that Egypt should provide adequate centres of excellence;
- b) that internal and external funds for research training be spent on staff training rather than solely on the individual;
- c) that in-country and regional training could be increased;
- d) that in applied science a valuable form of training is within the context and the conduct of the project.

1.7- Role of External Donor Agencies in Meeting Research Requirements

Most, but by no means all, respondents agreed that a select number of trainees, and more particularly the

trainers, should benefit from study in countries having more advanced research experience. For certain fields this could include some LDCs, e.g., India or Korea.

One expert struck an estimated 25-75 ratio between industrialized and in-country training. Another recommended sending trainees abroad only in fields where Egypt already has competence, adding that it was misguided to throw money at failure. Another respondent pointed to the fact that the biggest task was always in finding not trainees but trainers. Lastly, the rumormongers were going around that one large external donor agency was considering a four-year training package to upgrade some 1700 university staff members for a year or more in study abroad.

One wonders how much Egypt, already a recipient of gigantic assistance, can manageably absorb.

This time round training in the host country received strong endorsement. Reference was made to the advantages of conducting training within a cultural environment familiar to the participants, where development can be discussed most usefully and in the participants' own language. It was again stressed that a country gained more from its training dollar spent in home training than in sending trainees abroad.

The local courses, however, should aim to obtain the services of the very best trainers and consultants from the region or from abroad.

Regional training was also recommended. Several Egyptian institutions could point to some years of experience in conducting such training for Middle East countries and to some extent for African countries as well.

The training locale, then, could be in-country, regional or abroad, each having its unique advantages and limitations. External donor agencies would be well advised to respond to training requests accordingly. They should first take careful account of the current situation and recognize the lacunae, and only then, in cooperation with the recipient organization, complete the selection of trainees.

1.8- How Significant is IDRC's Support?

Although the Centre's entry into support for research training is relatively recent, and the contribution modest, it is nonetheless playing a visible and increasing role in Egypt, especially in areas of specialization.

A prominent journalist suggested that IDRC move into the really needy areas of training. He singled out communications as a huge potential for research and training, and added that German aid was prominent in this field.

Another observer felt that as both quality of research and adequate facilities are essential, the Centre examine the possibility of becoming a contributor in institution-building.

IDRC research and training policies and administrative procedures came in for praise. The Centre's efficient and personalized relationships with recipients was commended. Several commented - and the interviewer tried to keep the opinion objective - that The Centre enjoys high acceptability because in contrast to some more politically influenced or unwieldy aid agencies, it is much less authoritative or patronizing, and that the recipient, whether in a project or as an individual, is not over-monitored. Professionally the program officers - resident and visiting - were highly respected. Except for an occasional criticism of inadequate funding, virtually no negative comments were made about the Centre.

As to comparisons, one research administrator was highly critical of Egyptian universities who seemed to reward the researcher on his quantitative published output rather than on quality. He felt this practice militated

against the young and less influential faculty members and against the more conscientious researchers. One observer commended the three external donors of MEAWARDS for their regional committee which could objectively screen applicants and reward the deserving ones.

We were reminded more than once that ultimately the success of an IDRC or any other project, including training programs, depended heavily on the selection of the investigator. At the outset of new ventures, therefore, IDRC will need to evaluate with great care the candidates for the key position. Good evaluation will best reveal whether the Centre has been successful in its collaboration with recipient agencies in these appointments.

1.9- New Horizons

The list of new areas for research training was lengthy and interesting. To begin with, multi-disciplinary projects, and training for them became a more frequent comment as our interviews progressed. As was mentioned earlier in this Report, the multi-disciplinary team approach to research is relatively new in Egypt, yet its value is increasingly recognized.

Among areas where shortage of researchers was experienced, were the following, randomly listed: research management, S & T Policy, transportation, afforestation, tissue

culture, soil pollution and recycling of wastes. In some of these, for example S & T Policy, it was noted that Egypt has a fair body of experience but largely unrecorded. While the amount of information might be considerable, one observer added that "information is not necessarily intelligence".

In avant-garde research and training for it, the role of the consultant was stressed as essential in unknown areas of research.

Finally, the occasional respondent recommended that IDRC might consider joining hands more often with other research agencies - as indeed the Centre does from time to time when supporting more extensive or costly projects.

As a "benediction" one wise respondent philosophized that "In all IDRC funded projects, the aim must be for the research to leave its impact on the common man".

Persons interviewed for
the National Overview

- - -

Academy of Scientific Research & Technology	Dr. Hassan Ismail Dr. Gamal Abdel Samie
Al Ahram Newspaper, Strategic Studies Dept.	Mr. Sayed Yaseen
ALECSO & IDCAS	Dr. Osama el Kholy
American University in Cairo	Dr. Saad Gadalla Mr. Carl Schieren
Canadian Embassy/Cairo	Michael Temple
Central Agency for Public Mobilization & Statistics	Mr. Gihad El Mekaty El Rashidy
Development Research & Tech- nological Planning Centre	Dr. All Al Silmy
Ford Foundation	Mr. G. de Spoelberech Dr. Richard Roberts
High Council for Universities	Dr. Mohamed Taher Kireh
Institute of National Planning	Dr. Kamel El Ganzoury, Prof. Dr. Sakr A. Sakr Mr. Moh. A.S. Nassar
National Research Centre	Dr. Mohamed Kamel

III INTERVIEWEES RELATED TO PROJECTS
AND INSTITUTIONAL ANALYSIS

PROJECT 73-0010(A) SORGHUM, MILLET, LEGUMES (ALAD)

For the Arid Lands Agricultural Development Program (ALAD), Beirut Lebanon, to conduct research on the improvement and adaptation of sorghum, millet and food legumes to North African and Middle Eastern countries with strong emphasis on developing national research programs through the region (2 years)

2. GENERAL INSTITUTION

Agricultural Research Centre (ARC)
Sorghum Research Division
Ministry of Agriculture

Dr Sa'ied M. Dessouki,

President, Agricultural Research Centre

2.1 The ARC, founded in 1921, is one of Egypt's pioneer institutions. Dr Dessouki has been with the Centre since 1943. Basic research is left to other research agencies, he observed; the Centre conducts applied research in order that agricultural extension can disseminate those findings found practical.

After fifteen years, Extension is still a fairly recent rural service agency and has much to learn.

Strong support is given it to upgrade its service so it can achieve the best integration of research with Extension. To this end expatriate consultation and training abroad in Extension is invaluable; e.g., for some years a strong British four-man team at Sakhna has assisted in conducting an intensive demonstration project in agricultural extension. At present there are in Egypt some thousands of Extension agents - one for each one hundred acres. The best graduates usually opt for the research field, but more top-grade personnel should join the Extension Division, this group of researchers advised. In fact the panel interviewed commented at length on their integrated function in development with the Extension services.

ARC's network consists of a series of several districts and more smaller field research stations located throughout the country. Its central base consists of 11 research institutes in:-

Field Crops	Animal Sciences
Soil and Water Management	Veterinary Sciences
Plant Pathology	Extension
Plant Protection	Economics
Horticulture	Desert Research (in Al
Cotton	Mattareys near Cairo)

2.2 The Centre employs a total of 3000 of which 600 are PhDs. President Dessouki felt that this was sufficient staff and that they were properly qualified for the Center's program. The staff member's formal training was considered appropriate, as in his research capacity, he usually carried on uninterruptedly with his studies in his ARC job.

Most ARC members complete their training in Egypt. Some continue to go abroad to study in subjects still beyond the research competence of this country.

Staff losses are considerable, and with low salaries here, other Middle East countries and some in the West make it financially attractive for scientists to immigrate. The Government also encourages this limited period emigration as a huge earner of foreign exchange.

The best of the expatriate staff have, especially in the past, made valuable contributions to agricultural research in the region. There are of course shortcomings in engaging consultants - e.g., a good number are of average ability. Also at times older or retired staff are sent abroad whose outdated research qualifications may leave much to be desired. In fact Egyptian

researchers, if given the wherewithal, can conduct excellent research. They also have the advantage of familiarity with the local environment and do not need to "force the wants" as some external agencies may do. Very much the exception to this, in the opinion of ARC, is IDRC which they said was easily the best outside research foundation with which to cooperate.

2.3 As to constraints, the ARC saw no major bottlenecks in their research program. More technicians, however, could be trained. Library and other research facilities were almost always in need of additional support. Dr. Dessouki stressed the continuous exposure of his staff to other world research institutions. The cost of such studies abroad, he recommended, should be an item included where possible in an externally funded project because local Government funding was usually minimal.

2.4 The training program in ARC accounts for about 5% of their budget. In a research institution training is essential and this program is conscientiously conducted. Trainees are obliged to write examinations at term end, the results of which are the basis for promotion. Practical training is best, hence the encouragement given to staff secondment-

to the Academy of Scientific Research and Technology, to the Pioneer Company, and other agencies. Secondment benefits the researcher as well as the agencies concerned. All methods of training listed in the questionnaire were considered appropriate and were followed by this Center.

For training in new research subjects Dr Dessouki recommended competent consultants with up-to-date qualifications. If a top consultant was not available say for a years contract, it was suggested this person be invited for a shorter term. Always after the best!

2.5 Some four or five past trainees were mentioned as IDRC supported. They were mainly in-project rather than "separate fellowship" awardees or diploma degree granting trainees

The selection of trainees by the Center is given careful thought. Factors taken into account are quality of research, experience and language. Seniority was also a consideration but not a major one. Critical shortage areas were chosen for training staff, including IDRC funded trainees. No doubt was left that better work resulted from training, both in informal courses and, for special participants, in formal training as well.

One criticism mentioned with respect to the Food Legume improvement training component was the inadequacy of IDRC funding. More of this is in the subsequent interview with trainee Dr. Khalil.

Dr. Dessouki's staff were unanimous that, for their type of research, training abroad was most important. "It's really the best way to find out how good scientists think", one of them commented. Surprisingly they did not consider training trainers as important, as did interviewees from some other disciplines. However, they emphasized that trainees, on their return, must share their experience with Center staff.

Adequate monitoring of funds was endorsed and IDRC's style of not over-monitoring the project and keeping interim records and reports tidy but of limited length, was commended. We should add that, while IDRC was pleased to receive such comments, one can sympathize with the harassment of ARC administering their largest projects; e.g, a multi-million dollar US/AID program in cereals alone!

3. PROJECT LEADER-Mohammed M. el Ghorr

3.1 Mr Mohammed el Ghorr was the head of the Sorghum Research Division during the time when the trainees went to Lebanon. The present head is Dr Abd el Rehim Shehata, who was on sick leave at the time of the interview, and he could not be reached.

Mr el Ghorr does not consider that there was a project in the proper sense of the word. At least, not as far as he knows. Facilities were given to some junior members of his staff to go to Lebanon for training, but that was all.

3.2 Mr el Ghorr considers training as a very important component in any project. It enables trainees to know the most recent method, and tools of work in their own fields, including the application of the most modern theories.

He could not talk about the funds allocated for training, of which he had no knowledge, but he considers that six months training in the fields he was responsible for, was enough. There were two training sessions, attended by two (specialists) each. A specialist is a grade below a research worker. The two persons who attended the first session completed their training, while a trainee in the second session passed away. Mr el Ghorr left the assessment of the

training to the trainees themselves.

The only criteria considered in the choice of the trainees is seniority. The training grants are made to the division, and the opportunity should be equally open to all its members.

The training took place in Lebanon, where the program was conducted, so there was no choice in the matter. It was IDRC's idea and choice.

He considers that the practical training was useful, although not appreciably above the capabilities of the Egyptian trainees, as they will explain. They were following the same line of the work before going to Beirut, where they went to be "skilled labourers", and not research workers! There were no harmful consequences to the trainees.

Mr el Ghorr considers that in a well planned project, the first priority should be given to training, which becomes the first step in the project. Lectures and courses can go on during the project. As to visiting scientists, he considers it very valuable as it helps in the exchange of experience, and of benefits as well.

3.3 There were no difficulties with visas or travel arrangements. Individual trainees will elaborate on their experience with stipends and the

advice received.

Mr el Ghorr would like to see, in the future, the full details of any project laid down in detail including the training component. This should define all the obligations of both parties, with a follow-up of the execution of the stages of the program.

4. TRAINEES- Mr Mohammed I. Bashir
Mr Fathi I.H. el Attar

Mr Mohammed Ibrahim Bashir

- 4.1 Mr Bashir was 30 years old when he went on this training mission. He is now 36, and is single.
- 4.2 He got his B.Sc. from the Faculty of Agriculture, Ain Shams University in 1966. In 1976 he got a Diploma in Field Crops from al Azhar University. The area of specialization is Crops. The IDRC training grant was his first and last. After graduation he worked at the Sorghum research station in Sohag in Upper Egypt until he was called for Military Service. After five years from graduation he came to the Division in Giza where he is still working in the field of sorghum research.
- 4.3 The training received by Mr Bashir was in Beirut in 1974 for 7 months. Dr Leyland House from the Ford Foundation had worked in Egypt for a whole year in 1972 on some seed samples which he brought with him. One year later Dr House took him to Beirut for training. He attended courses and he worked in the field as a labourer (using his own words). The lectures were very useful and covered a number of fields.

They were attended by others from the American University in Beirut.

He applied for the award at the advice of Dr House, and he accepted it to increase his knowledge in the field.

The Centre of the ALAD Program was in Beirut, and that was where he went.

He experienced no difficulties or delays in applying or receiving the award.

4.4 Mr Bashir did not have to be prepared for the training, because he was doing in Egypt the same work which he later did in Beirut.

In his opinion the stipend was not adequate. He was provided with lodging and breakfast, plus pocket money which was not enough.

He encountered no difficulties in travelling to his training institution, and had no personal problems. His supervisor and IDRC staff in Cairo were very helpful.

4.5 Mr Bashir considers that the only benefit he got from the training came from variety of the courses which he attended. The field work he did in Beirut was similar to what he did in Egypt. The only difference was that in Beirut he had to do the manual work himself.

However, there are other courses which could have been useful: e.g., plant nutrition, fertilizers, agricultural techniques, etc.

A follow-up training will be useful, provided it will not be similar to the former training. It should include modern techniques in agriculture. There was no proper project, so he could not give any views on the most beneficial type of training.

Mr Fathi I.W.el Attar, was not in town during the interview.

Project 77-0073(A) FOOD LEGUME IMPROVEMT

For the Field Crops Research Institute,
Agricultural Research Centre, Ministry
of Agriculture, Cairo, to develop stable
high-yielding varieties of broad beans,
lentils, and chick-peas suitable to the
different agroecological regions of
Egypt. (3 years)

2. GENERAL INSTITUTION

Agricultural Research Centre (ARC)
Field Crops Research Institute
Ministry of Agriculture

Dr. Sa'ied M. Dessouki,

President, Agricultural Research Centre.

See Project 73-0010(A), for the statement about the
Agricultural Research Centre.

3. Project Leader - Dr. Abdulla Naseeb

3.2 Dr. Naseeb regarded training a significant part of any project. As legumes were a more recent research activity for ARC than say cereals, the training component was all the more important.

Dr. S.A.M. Khalil's four months' practical training in faba beans in Scotland was considered somewhat short as more time had been required for library study and data tabulation. A six-month period would have been the right length. Dr. Naseeb also made reference to Dr. Wahab's study in Wales and Newcastle, on an ICARDA/IDRC grant. Again he regarded this important because research in legumes was a special field not yet firmly established at Egyptian universities.

Dr. Khalil was selected for training on the basis of his 17 years' research experience and his qualifications. He is likely in the near future to be appointed head of his Section, further enhancing the value of his training.

Dundee's research centre was selected as the training unit after first comparing it with a number of other institutions. It was a good choice as Dr. Kahlil returned with the knowledge of valuable new technique for screening diseases.

There was again no criticism, only commendation, for IDRC as having funded "one of ARC's projects cum training". IDRC's practice of advising on preliminary project plans, and the reasonable flexibility in funding, were appreciated by this recipient.

As to the type of training preferred, Dr. Nasseb regarded all the methods listed as useful and expressed no preferences. In view of the repeated same response to this last question, one is tempted to let a group of good researchers in continuing professional education dig much deeper for IDRC into the relative merits of various methods of training. More is required than a quick answer, but almost all respondents lack an understanding of comparative methodology or even a basic knowledge of it.

3.3 No further comments.

4. Trainee- Dr. Shaaban A.M. Khalil

4.2 Dr. Khalil is 44. He obtained his:

BSc from Ein Shams University(Agronomy)in 1961

BSc from Cairo University(Plant Anatomy)in 1970

PhD from Cairo University(Plant Anatomy)in 1977

Two training periods abroad were:

- a) At ICRASAT, India, Dec. '79 for 3 weeks, on farming system improvement, on an FAO grant
- b) At Dundee's Horticultural institute - May 10 to Sept. 25, 1979, on an IDRC grant and under the supervision of Dr. Peter Weister, Head of the Institute's Crops Research Section.

Khalil undertook an ambitious program and said he completed all of it except the last item:-

- a close study of screening diseases in an evaluation method in field beans
- cooperated with J. Harrison at the institute
- used green house for breeding- left specimens there and asked results be sent to him in Cairo
- evaluated 3 breeding strains for fertility
- studied the effect of shading on two breeding lines (no time to complete it)

Several of the foregoing the trainee hopes to publish with Reg. Thomposon. One concluded that the trainee gave much from his period at Dundee.

Khalil spent 10 years as research assistant in breeding

before becoming a breeding researcher. He prefers his present full-time research to any other position. His efficiency would of course improve if his present very low salary would be raised.

- 4.3 The trainee applied for the award with the aim to improve his research and hence his career.

The selection of a centre was based on a review of various institutes abroad, with Dundee under the promising supervision of Peter Waister as the best choice, as in the end it also turned out to be.

He chose his own program of activities and the Institute gave Khalil the keys to the establishment seven days a week. He came away with an invitation to return when possible. No problems were encountered at the Institute.

The trainee estimated it took about three months for IDRC to respond to his request for training. A month thereafter he departed for Dundee.

- 4.4 Khalil did not prepare for his training abroad but once in Dundee, spent as much time in the library as his field work would permit.

A very real problem soon presented itself when the trainee discovered that the cost of living in the U.K. was well above the IDRC grant provision; for example,

his first night's accommodation alone was £10.45 whereas the IDRC's allowance for that whole day was £9.30. Transport was also expensive and food was very high. Khalil spent far too much time doing his own cooking. He also purchased books on his own expense. So the Centre grant of £1200 was inadequate.

The trainee suggested that some pre-course language training would have been useful. He also pointed to advantages for the trainee to be connected directly with the University, through his host institute.

On his return Dr. Khalil continued at ARC where he had left off but had a good deal of experience to share. He recommends a planned series in continuing education for the ARC research staff. What Khalil expressed in different words I interpreted as meaning that his greatest satisfaction in life was "to follow the fast receding boundaries of knowledge through research".

His aim as a follow-up activity is to cross Egyptian and Scottish bean strains.

Khalil's preference is for pre-project training. As to the best kind of training, he considers all the means and methods listed as applicable. If he were to single out one preference in a research program, it could be the multi-disciplinary approach.

Institutional Analysis - The Agricultural Research Centre
Ministry of Agriculture

The Agricultural Research Centre is the largest institution of its kind in the Middle East. IDRC had only two projects with ARC, one of them the first project sponsored by IDRC in Egypt.

President Dessouki and his senior staff consider IDRC as the best outside research foundation with which they co-operate, and are very appreciative of the role it plays in promoting research training to which they give high priority. It leads to the exposure of the staff to other world institutions. Yet, the small budget allotted for this purpose prevents them from sending abroad the desired number of senior and junior staff members, IDRC training grants help in providing the needed funds.

A point which should be taken into consideration is that teaching in the Faculties of Agriculture in Egypt is all in Arabic, which leads to the graduates being rather weak in foreign languages. During the interview with one of the trainees, this fact was mentioned, and he proposed pre-course language training. The other trainees, in the second project, were trained in Beirut where they spoke Arabic.

The former leader of one of the two ARC projects did not consider that he had a project, in the proper sense of the word; only grants for trainees to do some work in Beirut! His criteria for choosing trainees differ from those stated by the President of ARC. He considered seniority as the only criterion to be taken into consideration. He proposed that, for future projects, full details should be specified in advance, including the training component. Both sides should abide by the stated conditions.

A serious point emphasized by one of the trainees was that, in many cases, research trainees return to their institutions at home to find poor library facilities and no laboratory equipment similar to the ones they were using abroad.

Dr Dessouki and his staff hoped that, in the future, training would include some IDRC support for technicians.

Recommendations

1. Research training should avoid overly complex subjects of instruction, unless the corresponding sophisticated equipment is available, or will be available at home.

- 2- IDRC could sponsor some courses in Egypt for the training of technicians.

- 3- Former trainees could be supplied with IDRC research reports and other publications directly related to their just completed training. In addition, trainees should be aware of IDRC publications regularly mailed to their library.

Project 75-0130(I) AGRIS

For the Ministry of Agriculture, Cairo, to achieve better control of the country's agricultural literature, to feed data on this literature into the AGRIS (International Information System for the Agricultural Sciences and Technology) data base, and produce an Egyptian National Agricultural Bibliography, and to train staff for present and future operations. (2 years)

2. GENERAL INSTITUTION

Egyptian Documentation and Information
Centre for Agriculture (EDICA)
Ministry of Agriculture

Mr Maher Mina

Director, General Department for Documents
and International Statistics.

Mr Ibrahim Zaki Ibrahim

Director, EDICA

2.1 The history of EDICA goes back to 1975 when it was the Documentation Section. Its main functions were to fill the Agricultural Input Sheets and to send them to AGRIS in Vienna.

The present status of EDICA in the Ministry of Agriculture is related to the administration hierarchy of the Ministry. The Ministry of Agriculture has a number of Under-Secreta-

ries of State, one of them is for Foreign Relations. Under him there are four General Departments, one of them is the "General Department for Documents and International Statistics", whose director is Mr Mina.

This General Department has four divisions, one of them is EDICA, whose status was raised from a section to a division early in 1980. The four divisions of the General Department are:

1. EDICA, under Mr Ibrahim Zaki Ibrahim
2. International Information Division
3. International Studies Division
4. Economic Studies Division

The raising of EDICA from a section to a division, permitted its having a number of sections. These are:

1. Scientific Documentation Section
2. Information Retrieval Section
3. Current Research Section
4. Library and Micro-fiche Section
5. Statistics Section.

2.2 EDICA is still poorly staffed. The total number is 15 persons in the five sections, and some of them are absent on Military Service.

Mr Mina left it to the trainees to speak for themselves about their training experience.

Some of the needed information was given by him and Mr Ibrahim during their interview as team leaders.

3. PROJECT LEADERS - Mr Maher Mina

Mr Ibrahim Zaki Ibrahim

3.1 Project AGRIS is actually the responsibility of both Mr Mina and Mr Ibrahim. Both of them participated in the interview which gave the following information. They gave the following as the history of the project:

The Ministry of Agriculture approached FAO to study documentation and publication in the fields of agriculture in Egypt. Two experts were sent to the Ministry, and they submitted their report in which they recommended the established of the AGRIS project, with support from IDRC. This was late in 1975. The Ministry accepted, and the agreement was signed in September 1976.

3.2 They both consider the training component in any project very important, and give it first priority. A trainee returns, as they state it, a different person.

Trained persons in their field can be found in the country, but in other government departments. It is very difficult to have such persons transferred to EDICA. As an example, they mention trained computer programmes and technicians.

They need some of them, but they cannot have them transferred from other departments. Thus, they

must start from zero, and train their own personnel. They should also keep an eye on them so that they do not leave them to other places.

For this they consider that the training component in the project should be increased.

More persons for shorter periods is preferable.

The number of trainees was five, in addition to Mr Ibrahim, and they all completed their training successfully except Mr Bayoumi who will explain his circumstances.

The trainees had good chances to be nominated, because of the small number of the staff. The chosen person might not be of the best quality, but they had to choose him because of his language ability, and the chances of his returning home.

IDRC selected the training institutions, and they were good selections in general.

IDRC proposed the training programme, and the Ministry of Agriculture accepted it.

The training was always useful and directly relevant to the work of the trainees.

The trainees had about 2 years training in documentation before going abroad.

The leaders did not complain of any harmful effects resulting from the award.

Training is better undertaken at the early stages of the project. Visiting experts are always useful, and

they have asked IDRC to send Mrs Olga Lendway, who is the project advisor, to spend some time with them at EDICA.

- 3.3 Mr Maher Mina is, at present, the liaison officer between IDRC and the project. His relations with IDRC are excellent, and he has no complaints. Mr Mina considers that there used to be much correspondence which could be cut down if one is more exact, precise and specific! He says that there were no administrative difficulties with travel arrangements. However, for small grants, they must be unaccountable, with no need to submit receipts, which are sometimes unobtainable.

- - - -

An additional remark made by Mr Maher was the following:

The original proposal from the Ministry of Agriculture was to have IDRC help in establishing a new institute in connection with the AGRIS project. This part might not be implemented. Mr Mina fears that with the termination of the present project, the whole thing will slow down until it stops altogether.

Such projects dealing with new things in the

country should be actively followed up by IDRC to guard against their failure.

Mr Mina asks the question whether it is more beneficial that IDRC support so many projects in so many countries, or to support a limited number of projects similar to his own!!

4. TRAINEES - Ibrahim Zaki Ibrahim
Gamal Fayek Anderawis
Abd el Wahab A. Bayoumy
Rifaat Abd el Baset Ali
Ahmad Abdou el Ayyashi
Raga'a Abd el Hady

Ibrahim Zaki Ibrahim

4.1 Mr Ibrahim was 38 when he went on his training mission.
He is now 42, married with two sons.

4.2 He got his B.Sc. in general agriculture from Cairo University in 1971. Later in 1969 he got a diploma in statistics from the Institute of Statistical Studies, Cairo University, and in 1977 he got another diploma in computer sciences from the same Institute. At present, he is preparing an M.Sc. entitled:

"A Critique of the Current State of the Art of AGRIS".

He did not receive any training grants before or after the IDRC grant.

After graduation he was appointed in the Ministry of Land Reclamation:

As agricultural engineer from 1962-67,

As staff member for 3 years

As director of the statistics department for 3 years.

He became the director of EDICA in 1977.

In this last capacity he divides his time equally between administration and technical work.

- 4.3 His training was for 3 weeks in Vienna where he attended the Inis-Agris Training Program. This was followed by one week training in Rome.
- 4.4 The original training program of Mr Ibrahim was of two parts: The first part, for 4 months, at the General Meteorological Department in Egypt, on computer techniques. The second part, for 6 months, in Vienna at the International Atomic Energy Establishment. This part did not materialize because of some difficulties and shortage of staff in Vienna. It was proposed that he attend the International Nuclear Information System (INIS)-AGRIC Seminar in Vienna from October 30- November 3, 1977. He was asked to contact IBM to arrange for a training program in one of the offices in Europe. It was not IDRC which made the contacts. This put him in a weak position, because there was no former agreement with the Ministry of Agriculture to use IBM equipment. After one year an agreement was signed between the Ministry and IBM. He chose a training program which he sent to IDRC, but was considered of little use. IDRC proposed training at the Industrial Development

Centre for Arab States (IDCAS) on ISIS, but correspondence took a long time until the activities of IDCAS were temporarily frozen.

He accepted the training in order to improve his knowledge.

All the staff of EDICA are agriculturalists, and he is the only computer man amongst them.

The training course was fixed for him.

The dates were also fixed.

4.5 Mr Ibrahim was adequately prepared for the training programme. Mr Sutton from IDRC attended the Seminar in Vienna, and advised all IDRC trainees who attended it.

He found the stipend adequate, and he did not meet with any difficulties in travelling or in language.

He believes that it might be necessary to monitor the training programmes for those who are receiving their first training abroad.

4.6 The subject material of his training was quite relevant and useful for him.

The Seminar which he attended included sessions during which members could ask about anything they have in mind.

He feels that he has assimilated 80% of the training material.

He hopes to go on a visit tour of 1-2 months to advanced centres, English speaking, in order to transfer

the functions and know-how to EDICA. When he returns he will be better qualified to train others, and also more appreciative of the difficulties of juniors when they go on training.

Mr Ibrahim considers that in his field there should be local training before going abroad. This can be at the early stages of the project. An expert can be invited to help trainees in applying the knowledge gained abroad.

- - - -

Mr Ibrahim mentioned that Phase I of the project ends in November 1980, and there is to be an extension for the introduction of micro-fiche and computer facilities.

Gamal Favek Andarwis

4.1 Mr Andarwis is 35 years old.

4.2 He received his B.Sc. in Agriculture from the High Polytechnic Institute in 1967. This Institute became the Faculty of Agricultural Sciences, and is now affiliated to Zagazig University.

He attended a training course in editing for 2 months at the American University in Cairo. He did not receive any sponsorship for training.

4.3 The IDRC first award took him, with Mr Bayoumy, to visit the national documentation centres in Tunisia, Italy, England and Holland. In Rome they visited the FAO documentation centre and its library. They attended the AGRIS Consultation Meeting. All this took them 6 weeks.

For the second award he went alone to India for one year (July 1978-August 79), to the Documentation Research and Training Centre in Bangalore. He was preparing for his M.Sc., which requires work for a second year in Egypt. He is now at the end of this second year.

He accepted the training award for the sake of his career.

The two training missions were arranged by Mr Emil Samaha from IDRC, and they were excellent.

He met with no difficulties in the application for the grant, as the proposal came from IDRC.

It took him a long time to start the mission to India because of a mistake in addressing a letter to him. It was sent to India while/^{he}was still in Cairo. Mr Dessouki helped in solving the problem.

4.4 Mr Anderawis was well prepared for the training programme.

The stipend was adequate in Europe. In India it was far below the adequate level. It was calculated by the

Indian side, and they must have considered it for an Indian living in India. He asked for an increase in the stipend, and he got half of what he requested. There were no difficulties in travelling to his institution.

He experienced no language difficulties.

There was no need to monitor the training in Europe as it was perfectly arranged two months in advance. In India, Mr Emil Samaha visited him there, and it was a useful visit. Mrs Alga Lenway from IDRC, who replaced Mr Samaha, visited him during his last month in India.

It would have been better half way through the mission. He had some family problems because he had to leave his wife & child in Egypt. They could not accompany him because his award was an "extra" one.

4.5 The attended courses were relevant.

They should have included a course on Industrial Information System.

The courses were useful for his own work. Follow-up training is very useful, in order to up-date his knowledge in the field.

The best time for the training depends on the length of the period. For a long period, training should be before the project. Short periods can be during the project. Visiting experts are very useful as they can teach a number of trainees.

Abd el Wahab A. Bayoumy

4.1 He is 34, married with one son.

4.2 He got his B.Sc. in Agriculture from the High Polytechnic Institute in 1967. He attended a training session for 3 months with the local newspapers: al Ahram, Akkbar and Gamhouriah, in translation and editing.

He did not receive any training grants before or after the IDRC grant.

He joined the technical staff (a specialist as they are called) at the Agricultural Economic Department for 3 months to estimate the agricultural crops in the Province of Beni-Suif. In 1969 he joined the Agricultural Culture Department, and in 1975 he joined EDICA in the Documentation section, where he is still working.

4.3 His first award was with Mr Andarewis in Europe and Tunisia. It was successful.

The second award took him to England and it was for one year, but it was not a success, as he had to return to Egypt after 2 months only, Mr Bayoumy says that he had applied to a number of universities and he was accepted by City University in London.

IDRC gave its approval. He went in October 1978.

He was the only foreigner amongst 30 students who attended the courses. This caused him great difficu-

lties. He could not get hold of the recommended reading material which was not enough for the 30 students. The head of the Department proposed to the IDRC representative in London that Mr Bayoumi could be given another chance in another university. He had to return to Egypt where he left his family. He says that he should have gone to England 2 months earlier in order to acclimatize himself to the new life there. Mr Bayoumi accepted the award for the sake of his career.

For his first grant, he agrees with Mr Anderwis that he met with no difficulties in applying for the grant.

4.4 Mr Bayoumy was apparently not adequately prepared for his second training mission.

The stipend was adequate in Europe, and reasonable during his stay in London. He experienced no language difficulties.

An added personal problem in London, as he puts it, was that he had to live in the Hall with a great number of students. This hindered his work!!

4.5 The courses were useful to him. He feels now a better professional person.

He recommends a follow-up training, for one year, and in a branch closer to his work in EDICA.

Long period training should be before the initiation of the project, while short ones can be during the project, or at its end, as the work will continue after the termination of the project. He had no specific views on foreign experts.

Rifast Abd el Baset Ali

- 4.1 He is 39, married with one child.
- 4.2 He got his B. Sc. in Agriculture, like his former two colleagues, from the High Polytechnic Institute in 1966. He spent 3 months on a training session with the local newspapers as translator and editor. He received no training reward before the IDRC award. In 1967 he was appointed an agricultural engineer in the Province of Dakahliah, with the Ministry of Agriculture. From 1968-75 he worked at the Agricultural Culture Department as a translator and editor. From 1975 until now he is working with EDICA.
- 4.3 The IDRC award was for one year at Sheffield University, from October 77-September 1978. He worked for his M.Sc. degree at the Post Graduate School for Librarianship and Information Sciences. It was IDRC that selected the training institution, and it was an excellent selection. The problems which he encountered in being accepted

at Sheffield University were caused by the long correspondence concerning the evaluation of his qualifications and the admission requirements. The Egyptian Cultural Councillor in London solved this problem.

This resulted in his arriving late to Sheffield.

4.4 He was not prepared to the training programme. He was an agricultural engineer studying computer sciences for the first time, and he did not know anything about the subject. In his opinion, this difficulty could have been overcome had he travelled 2 months earlier to get the curricula, and get used to the new life.

The stipend was adequate, and there were no travel difficulties. The language was no problem.

However, there were two points mentioned by Mr Ali which, he hoped, could be changed: The need to submit receipts for every expenditure, and the lack of liberty to exceed expenditure on one item of the budget at the expense of another item.

There was no supervision from IDRC, although someone visited him in Sheffield late in the year.

He suffered from loneliness. He was not aware of IDRC regulations which permitted his family to travel with him. It was too late to ask for his family when he knew that he could do so. He proposes that trainees go in a group of two at least, to help each other.

4.5 The courses he took were relevant and very useful.

He would have liked to have taken some introductory courses in computer techniques.

The training has helped him in his work in Egypt.

A follow-up training for one year will be very useful.

He prefers the training to be at the early stages of the project. Visiting experts are useful.

Ahmad Abdou el Ayyashi

4.1 He is 36, married with one child.

4.2 He has a B.Sc. degree from the Faculty of Agriculture, Cairo University, 1968. He attended a training course in editing for 2 months at the American University in Cairo, Later in January 1980, he attended another training course arranged by IDCAS in documentation and information.

From graduation till 1974 he was with the Land Reclamation Establishment. During these years he did his Military Service. From 1974-77 he worked with the Agricultural Culture Department. He was transferred to EDICA, with which he is working till now.

4.3 He attended a training course in Nairobi, Kenya, on documentation and information, from April 21 - May 7, 1979.

He was nominated, with Mrs Raga'a Abd el Hady, to attend the course, and IDRC was approached to finance it.

The rest of the items in the questionnaire either did not apply to his case, or he was of the same opinion as the other trainees.

He mentioned that he received his stipend some time after his arrival to Nairobi. This caused him some slight inconveniences.

Institutional Analysis - EDICA

The Egyptian Documentation and Information Centre for Agriculture (EDICA) is a newly established body at the Ministry of Agriculture. It succeeded the Documentation Department of that Ministry, and it is there that the AGRIS project is implemented.

The responsibility of this implementation is divided between Mr Mina and Mr Ibrahim, who both spoke for the institution EDICA, and for the project leaders.

Considering that EDICA is the responsible body at the Ministry of Agriculture for the control of the national agricultural literature, and providing agricultural information service, one must say that it is poorly staffed and poorly equipped. The specialities which they need are rather short in the country, and there is heavy demand for them from other quarters which pay higher salaries.

The whole infra-structure is weak: personnel, space, equipment and technical management. Mr Mina is calling on IDRC to establish a specialized institution provided with all the heavy equipment, including a computer.

The senior trainee, Mr Ibrahim, was not sufficiently trained abroad. The junior members, five in number, were trained adequately, but they need guidance. They need a well organized setting to fit into if they are to benefit from their training abroad.

EDICA has not opened the proper channels with the potential users of the data that is available to them. They have not gone out to those users to tell them about the services they can render to them, but were satisfied with sending them letters and pamphlets. Some of the staff in the Faculty of Agriculture at Alexandria University said that they never heard of EDICA.

Both Mine and Ibrahim fear that with the termination of the IDRC project, the whole program will not grow, and may in fact deteriorate.

Recommendations

1. The team of former trainees working now at EDICA should be provided with guidance from abroad, in the form of an expert from a country like India. Mr Ibrahim can be his counter-part.

2. The recommendations of the expert can be the basis for any further support from IDRC.
3. EDICA is not a well established research institution, or a university faculty; it is instead a newly created service department in a Ministry. IDRC's approach in any future support will need to take this into consideration.

Project 75-0048(A) CASUARINA

For Alexandria University, to enable its Faculty of Agriculture to initiate a breeding program for the improvement of Casuarina species for shelter belt plantation, to develop techniques for vegetative reproduction, and to train agricultural officers involved in afforestation. (3 years)

2. GENERAL INSTITUTION

Faculty of Agriculture
Alexandria University

Dr Khalid Abdel Salaam el Shazly,
Dean, Faculty of Agriculture.

2.1 The Faculty of Agriculture was established in Damanhour in the year 1942, and transferred to Alexandria in 1974. It is one of the eleven Faculties of Alexandria University. At present it has 13 departments, one of them is the Department of Forestry and Wood Technology, where the project was executed.

There are about 7,000 undergraduate students at the Faculty, and 780 post-graduates. During their first year the students receive education in basic science while during the second year

they receive basic agricultural education.

In the following two years there is specialization.

Dr Shazly considers the Faculty as one of the best in the whole Middle East, and is outstanding in certain fields, such as Soils, Plant Protection and Pathology. Yet, it all depends on the presence or absence of members of the staff who may leave the country on loan to other countries, thus resulting in slower pace of work.

2.2 The Faculty has 240 members of the staff with Ph.D. degrees, and 240 holders of M. Sc. degrees who work as demonstrators and instructors.

Many of the staff leave the country to work in other universities for the sake of better salaries. The University limits their number to a maximum of 25% of the staff, and up to 4 years absence. This can upset the activities of certain departments, depending on the quality of the staff members who go away. Expatriate staff are not considered a source of manpower, yet it is useful to have them. It is rather difficult to give their exact number, but the Faculty of Agriculture can easily receive about 15 persons from abroad each year.

2.3 Dr Shezly considers the following as the main difficulties and bottlenecks in running the University, and in effective research work:

- The first bottleneck is poor management,
- Then comes poor facilities and equipment.
- There is a heavy teaching load on the staff, which prevents them from doing enough research. The Faculty allows a certain percentage of the staff to be freed from teaching each semester to devote more time to research and extension. This is a decision which has been only recently taken, and it is an experiment to be watched for its results. Formerly, they used to have extension education, but no extension services.

Dr Shazly mentioned the symposia which were recently organized by the Faculty, one of them with the Faculties of Agriculture in Africa on:

"The Role of Regional Universities in the Development of Society". A number of foreign expertise attended this symposium.

2.4 The most useful type of training depends on the trainee his calibre and his age. For senior staff short visits to chosen institutions can be very useful. For less senior staff sabbatical leaves are preferred.

2.5 The number of former IDRC trainees is four who are at present in the Faculty, plus another who has just gone abroad (Mr A.M. Nour).

Dr Shazly considers in-project training as the most useful type.

Particulars about the trainees will be given by the individuals themselves.

The trainee is selected according to his specialization.

Other criteria to be considered are:

- His being active,
- His being junior, without excluding senior persons.

All the trainees have benefited, and some have returned with great confidence in themselves.

There were no problems with IDRC trainees not returning to the country. Mr Bourhamy is still in Norway, after extending his mission abroad by six months, and he is supported by the Norwegian Government.

Further Remarks

1. Dr Shazly is happy with IDRC projects and programmes.
2. He wishes to see more attention given to the question of the technicians, who are creating big problems because of shortage in number. In central service laboratories need more technicians who

are not available.

Another difficulty with technicians is that they are poorly paid, so they are easily lost to other countries, or to Open Door Ventures, where they are better paid. There is a great number of expensive equipment which are out of order, with no one to attend to them.

Dr Shazly proposed, as a solution, to train some graduates, with low grades, to maintain equipment. They will stay on the job and get better pay.

3. The reports which are submitted on the projects are not usually examined in good time, and they are scrutinized by specialists who do not have enough time to do this. He expects to receive critical comments on the reports submitted by project leaders, who spend much time preparing them.
4. Agro-economics must be emphasized. Parallel projects can go together, one technical and other economic.

3. PROJECT LEADER - Dr Osaman A. Badran

Dr Osaman Adly Badran is out of the Country in Khartoum,
on a permanent job there.

4. TRAINEE-Dr Mohammed H.H. al Lakkany

4.1 Dr Lakkany is 39.

He gave the general history of Casuarina in Egypt in the following:

There are 55 species of Casuarina. Late in the 18 th Century, 18 species were introduced into Egypt from Australia, for breeding as shelter belts. Only three of them were found tolerant. Casuarina wood has relatively high calorific value, and maybe used as fuel.

4.2 Dr Lakkany got his Ph.D. degree from the University of British Columbia, Canada, in 1971, and went into the field of breeding Casuarina in 1973. He was a member of the committee on Shelter Belts.

He got the IDRC training award in 1977, and since then he did not have any further training abroad. However, he went on consultation missions along the North African Coast, in connection with the Green Belt of North Africa. This is a joint ALECSO and UNEP project, whose office is in Tunisia. After examining the whole area, they concluded that it was not practical to have a green belt, but rather to create a number of oases along the coast.

He is still active in research, which he gives 50% of his time, the other 50% is for teaching. He tries to avoid administration work. He has applied for a second Phase of the project, and he will be the leader. It will be for 3 years.

4.3 His training award was part of the project. It was in 1977, and he made a tour for five weeks in Australia to discuss the Egyptian contribution in Casuarina breeding. This tour was very successful, and was followed by attending a conference in Canberra. The course of study was arranged with some Australian scientists whom he met in Oslo, and he sent the proposed program to IDRC for approval. He accepted the offer in order to better his scientific career.

The training courses introduced him to new dimensions of the work which he was doing before.

Dr Lakkany experienced no problems of any kind, and he was helped by Mr Lessard, Head of the Forestry Department of IDRC.

4.4 Dr Lakkany had no difficulties with travelling arrangements or with the stipend.

He leaves again on June 25 to Australia for 3 weeks, and this will be followed later by the one year training mission supported by IDRC, which Dr Lakkany thinks he may reduce to six months.

4.5 The courses of the training course were proposed by him and approved by IDRC. His second mission in Phase II of the project is going to be visiting institutions rather than attending courses. He expects to give seminars as he did in his first mission when he was

asked to give two seminars. In these he dealt with research in this field in Egypt, which proved to be very useful and rewarding sessions.

He believes that the training is most beneficial if it takes place during the project. His anticipated fellowship will take place during the 3-year Phase II of the project.

Dr Lakanny believes that foreign experts are very useful, and can convey their new ideas and experience to the staff through lectures and symposia.

Project 77-0074(A) BY-PRODUCTS

For Alexandria University to increase animal production and the supply of animal protein for human consumption through the efficient utilization of agricultural and industrial wastes and by-products by the Egyptian animal feed industry. (3 years)

2. GENERAL INSTITUTION

Faculty of Agriculture

Alexandria University

Dr Khalid Abdel Saleem el Shazly,

Dean, Faculty of Agriculture

See: Project 75-0048(A), for the statement about the Faculty of Agriculture.

4. TRAINEES-Dr Mohammed A. Abaza

Dr. A.M. Nour

4.1 Dr Mohammed Abaza is 42.

He is married with three children: 3,8 and 13 years.

4.2 He is a graduate of Alexandria University: B.Sc. and Ph.D. The last degree was received in 1972.

The IDRC mission in 1977 was his first abroad.

Since his return, he went to Khartoum for 8 months to advise the authorities on the utilization of certain by-products. There, he had family problems caused by not finding proper schools for his children.

Since his graduation he has been working with Dr Shazly in the Department of Animal Nutrition. He has both teaching and research duties to perform; the ratio varies in different semesters.

He is working on a point which was first discovered by Dr Shazly, namely the treatment of poor quality by-products with ammonia in order to increase their nutritive value and their digestibility.

He was lecturer when he received the award, now he is assistant professor.

3.4 The training award was part of the project, and he accepted it to increase his scientific capabilities. He selected the courses before leaving, but he had

to follow what was made available for him.

Dr Abaza said that he had many problems with the institutions which he visited. In Saskatchewan where he spent one month, he was not well received. Not much help was given to him, as he was referred to a graduate student. He spent another month in Mr Gill University and a third month at the University of Guelph. These were two better periods for him. He then spent one useful week in Denmark where he met scientists from Australia and England, and another week in Norway at the Institute of Nutrition. He ended with a week in England which was not much good.

He did not tell IDRC about the difficulties which he encountered.

4.4 Dr Abaza was adequately trained before leaving. Dr Shazly had arranged for his travel.

He considers that the stipend was just enough to live, and thus it was not adequate. In Guelph he lived with a friend, and this balanced matters.

The hotels where he stayed were reserved by IDRC at an average rate of \$26, while his per diem was only \$30. His total grant was \$6,000, but the actual expenditure was only \$3,500, which could have allowed providing him with some extra money. His mission was for 4 months, but he used only 3

months and ten days.

He had no visa or travel problems, neither did he have language problems.

He was looked after by Mr Stinson, who was very helpful, and when he returned to Ottawa he found another, who was just as helpful.

Dr Abaza does not consider it necessary to monitor training programmes.

4.5 Dr Abaza considers that all the courses he attended were relevant and useful. He now uses the subject material of the courses in his lectures and research. He considers the follow-up training very necessary. It should be in one place, and for a short period. In fact he has already applied to the University of Guelph for a grant to spend a short period with Estak Technology Factory. He wishes to get more experience in the work they did in the treatment of wood pulp with steam to produce material with almost zero digestibility to be used for fattening animals. Dr Abaza went on his training during the project. In his opinion the training should be during the project, if it is for short periods, and should be in subjects related to his specialization. If the training is intended to be for a long period it should be before the ^oproject, so as not to interrupt the work.

Training through visiting professors is more useful for the mature staff who can discuss matters with them, but not so useful for graduates. A visiting professor can spend 2-3 months to give graduate courses and seminars.

Dr Abaza calls for an increase in the stipend, and he points to the differing financial treatment of IDRC trainees.

- - - - -

Dr A.M.Nour, the second trainee in this project is abroad for a number of months.

Institutional Analysis. Faculty of Agriculture
Alexandria University

There are two IDRC projects with the Faculty of Agriculture, Alexandria University:

Casuarina, in the Department of Forestry, and

By-Products, in the Department of Animal Nutrition.

There was also a Research Award given to Mrs Bakry in the Pesticide Hazards Unit of the Department of Plant Protection.

The Dean of the Faculty is quite satisfied with IDRC programmes. However, he made the following remarks:

1. He would like to see more attention given to the training of technicians, whose shortage is becoming a severe constraint on teaching and research.
2. To give more prominence to the socio-economic impacts of scientific and technological activities.

All the IDRC trainees are experienced, fully qualified persons. They all admitted that they have benefited from their training which introduced them to "new dimensions", as one of them put it. None of them has been "lost" to other countries.

They all complain of the heavy teaching duties

caused by the large number of students (about 7000) together with the rising number of staff seconded to other countries.

Some of the research findings of the awardees, resulting from their IDRC supported studies abroad or at home, are being applied—Dr Lakkany with his work on Casuarina, and Dr Bakry with her research on Pesticide Hazards. We did not hear from Dr Abaza about applying his research on a wide scale on fattening cattle.

The small number of training grants which are given to a limited number of the staff of such a large Faculty, only just introduces IDRC to the "vocabulary" of this limited number and their friends. One wishes IDRC activities could be made known to a much larger number of the faculty!

Recommendations

1. The socio-economic impacts of scientific and technological activities should be given more prominence.
2. Follow-up of IDRC trainees after they return home is suggested to learn what and how they are doing.
3. Former trainees should be assisted in applying their research. A possible incentive for their doing so might be grants to travel and compare their results with those in other countries.

4. Closer examination should be made of the reports submitted by project leaders. Dean Shazly had remarked that this is not always done.

Project 77-0035(A) AQUACULTURE

For the Academy of Scientific Research and Technology, Institute of Oceanography and Fisheries, Cairo, to develop effective methods of increasing fish production and fish culture with a view to establishing a viable alternative to present fishing practices on the inland waters of Egypt. (3years)

2. GENERAL INSTITUTION

Institute of Oceanography & Fisheries (IOF)
Academy of Scientific Research and
Technology (ASRT)

Dr Abou el Fotouh Abdel Latif,
Secretary General, ASRT,
Formerly, Director IOF.

2.1 The first Hydrobiological Institute was established in Alexandria in 1930, and was part of the Ministry of Agriculture. In 1931 the Marine Biological Station was established in Mergada, on the Red Sea, and was affiliated to Cairo University. Both the Institute and the station had branches in Suez. In 1963 they were both affiliated to the Ministry of Scientific Research

as one body under the name of the Institute of Oceanography and Fisheries. With the establishment of the Academy of Scientific Research and Technology in 1971, the Institute was affiliated to it.

It has a number of divisions, one of them for Inland Waters and Fish Farms. This division has a number of stations: in Lake Nasser in Aswan, Lake Karoun in Fayoum and at the Barrages near Cairo.

2.2 At present the Institute has the following staff:

The total number of persons is 900, about 300 of whom are professionals. At these, 45 are holders of Ph. D. degrees, mainly from Egypt.

There are about 130 technicians.

The Inland Waters Branch has 50 qualified persons. The staff is considered sufficient, had it not been for the frequent secondment to the Arab Countries.

The majority of the staff received the Training within the country. They are given the chances for short training missions abroad, apart from attending conferences and symposia.

There is relatively high staff turnover. Many senior members of the staff are seconded to the Arab Countries. The maximum is 25% of the total

staff. This is often detrimental to research activities.

Some of the senior staff are lost to other non-research activities. Dr Latif himself became the Secretary General of the Academy, but he was easily replaced.

Foreign experts are useful when there is need for them. We should lay down clear terms of reference for the expert, and thus we get better performance. Dr Latif does not find need for a great number of experts in the field of oceanography and fisheries.

2.3 There is a number of research constraints and bottlenecks, but the general shortage of staff is not one of them. The shortage is felt in some of the multi-disciplinary specializations, which is the case in all developing countries. There is great need to introduce and adopt the multi-disciplinary approach to the problems, and the proper personnel for this are not available. Exposure to research in other parts of the world will certainly help to train the needed staff.

2.4 Training is, and has always been, an important component in the work of the Institute. There has always been persons who were trained, or who have finished their training abroad.

Dr Latif considers training important, through formal or informal means, in new fields related to oceanography and fisheries. Emphasis should be given to new methodologies in: pollution, stock assessment, shore protection, modelling and evaluation of projects.

It is more important to improve the quality of personnel. The qualified person can start to train others.

Before training abroad, a person should receive all the basic knowledge at home. This is easily done in the case of Egypt. A number of persons can be sent abroad for short visits, not excluding sending one for a long training mission.

Visiting scientists are quite useful, provided they have a properly planned program.

2.5 Dr Latif said that the number of IDRC sponsored trainees in his project is four: two have returned, and two are still abroad.

They all went during the project. Those who returned have benefited very much from the training, and increased their knowledge in the fields of their specialization.

The Centre training programme can be made more useful by increasing the number of trainees who work with senior and experienced people at home.

Some can later be sent abroad.

It is essential for IDRC to follow up the trainees, even after the end of the project. Some difficulties might be discovered which are affecting the performance at home. As to the monitoring while on training mission, Dr Latif believes that this can be done through the progress reports, rather than sending a person to monitor the training.

So far there was no problem with trainees not returning home after their IDRC missions.

3. PROJECT LEADER - Dr Munir Ishak

3.1 It was Dr Latif and Dr Ishak who initiated the project under the name "Aquaculture". Dr Brian Davy and Dr Ishak drafted the project, and it was then finalized by Dr Davy.

3.2 Dr Ishak considers training as a very important item in any project, as it helps in gaining new experience in cage and pen cultures in their project.

Four persons were sent for training, and he considers this as enough at this stage. That is apart from his own training mission, which took him to the Philippines for 3 weeks on an observational visit. He was to leave for Hungary one week after the interview, to visit Dr Alsopp and see his experiments in cage culture and Chinese carp. This visit is to last 3 weeks.

The junior trainees benefited very much by their visits to the Far East and East Europe. The stations which they visited were well chosen by IDRC. They had no previous relations with the Philippines institutes.

The trainees were selected because they were project members, and they could train others on their return. They were also keen and able. They learn the principles and then apply what is relevant to the project. In the Philippines they

were involved in training and not in research. The training institution was chosen by Dr. Brian Davy who provided Dr Ishak with literature about the Philippine institutions.

The language was a constraint in the Philippines. The 2 trainees lived together, and this did not help improve their language.

Before leaving, the first 2 trainees had little idea about cage and pen cultures. It was only pond culture which was used in Egypt. The two other trainees were more fortunate because they knew more about this before starting on their training.

There were no harmful effects resulting from traveling abroad for the training.

The project was not held up when the trainees went abroad.

The best kind of training depends on the project itself. In their project it should have been for short visits by senior persons before the project, followed by short visits during the project by less senior persons. Visiting experts are very useful as they help in the exchange of ideas. Mr Halili, from the Philippines is currently visiting, the IDF for six weeks.

3.3 The relations between Dr Ishak, as the Project Leader, and IDRC are excellent. The Cairo Office

is very helpful. It is facilitating communication with the outside world and providing them with the literature asked for by the team members. The Institute now has a good collection of books and publications. IDRC have provided the IOF with some equipment.

One important suggestion, as Dr Ishak sees it, is to include an item in the budget for salary topping. This would be an important incentive for the persons involved in the project.

Dr Ishak sees the monitoring of training programs a useful thing to do, but it is not essential.

- - - - -

Dr Ishak added that according to the original timetable, the project is to end December 31, 1980. However, because of a one-year delay at the start, they are going to ask for an extension, without additional funds, for one year.

As an outcome of the project a company is adopting the cage culture technique in Lake Nasser at Aswan, the Misr/Aswan Fishing Company, which is para statel. It is utilizing the experience gained by the Inetitute in its work under the IDRC project.

4. TRAINEES - Mr Kamal A. Mostafa

Mr Demian W. Sa'ied

Mr Ezzat A. Badawi

Mr Abdel Rahman A. el Shzly

Kamal A. Mostafa

4.1 He is 42 years old, married with 2 sons; age 4 and 2 years.

4.2 He got his B. Sc. degree from Cairo University in 1965, in Chemistry and Entomology.

After graduation he went to Hungary and Yugoslavia for training in fish farming. The award came from the Ministry of Agriculture.

It was useful training.

He did not have any training after the IDRC award.

He joined the Institute of Oceanography and Fisheries in 1966, and he started his research in Alexandria Branch of the Institute. He then went to Serw fish farm in the Province of Dakahliah, where he is still working.

4.3 The IDRC award took him to the Philippines for training for 2 months on cage and pen culture techniques. This was in 1979. It was useful experience. He accepted the award in order to learn more about the subject. He was selected by the IOF.

The training institution was selected by IDRC, as it was stated in the contract that he goes to the Philippines for the training, and it was a good selection.

Mr Mostafa encountered no problems, and there were no delays in receiving the award or starting on his training.

4.4 Mr Mostafa had some experience in cage culture.

It was not his first contact with the subject. He was trained in the field and he saw it before in other places, and had some start with it in Egypt.

He had no problems with the stipend and was given all the facilities he needed.

4.5 In his opinion, some of the courses taken were not relevant to his work, but, he was one member of a group which was attending a general course. An example which Mr Mostafa gave was the methods for the analysis of water.

The training which he received helped him to modify some of the methods which were previously used in Egypt. The cages used in Egypt were made of iron. He then learnt, after the training, how they can be made of wood or bamboo. The pen cultures are being built in Fayoum and in Lake Idkou.

The cage technique used in Serw fish farm is being adopted and expanded in other places, such as in Damitta.

He sees more training very desirable, but in another country than the Philippines, although he could not name a country. The length of the training depends on the country. He had spent one month in Yugoslavia, which was too short, and 2 months in Hungary, which was adequate.

Mr Mostafa prefers the pre-training in his field, although the in-project training, in other fields, might be preferable.

It is always useful to have visiting experts come and give new ideas.

Damian Wahba Sa'ied

4.1 Mr Sa'ied is 32, and single.

4.2 He got his B. Sc. (with very good grade) in General Zoology from the Faculty of Science, Alexandria University, in 1977, and a Diploma in Biological Oceanography from the same university in 1975.

At present he is preparing for the M.Sc. degree.

He did not receive any sponsored training before the IDRC award, or after it.

In 1974 he was appointed as a specialist a rank nearer to a technician than a research worker,

at the Institute of Oceanography and Fisheries in Alexandria, where he is still working.

4.3 He received the IDRC award in 1979, from March 13 till May 15. He was trained in Manila at the South East Asian Fisheries Development Centre (SEAFDEC), and the Fresh Water Fishery Stations.

His training included lectures on how to build the cages and fish enclosures, as well as practical training.

He also worked on natural feed production, as well as supplemental feeding by protein rich food.

He was recommended for the award by his Institute because he was a member of the research team, and had previous experience in fish farming in Balteem and Lake Bourolloe. He accepted the grant because it would help him with his higher studies.

The courses which he attended were those provided by the stations he visited.

He had no difficulties, and there were no delays.

He was received at the airport on his arrival to his destination.

4.4 Mr Sa'ied says that he was more than adequately prepared for the training program, because of his Diploma in fish farms. The trainers had more practical experience than theoretical knowledge.

The stipend was reasonable, and he encountered no difficulties, although it was his first trip abroad. He had language difficulties for a week or so. Sa'ied received no advice from any IDRC personnel. For his short grant he did not see any need for monitoring the training programmes.

His main personal difficulty was in not finding the proper lodging. The station did not have special accommodations for visitors, and he had to be lodged with a native who took advantage of him and charged him rather steeply for everything. He shared one room with the other trainees, Mr Mostafa. He believes that they could have been better treated had the station authorities intervened in providing them with the needed lodgings.

4.5 The training material was relevant. The station was pursuing its normal work, and the trainees joined in this work. There were 2 from Egypt, 2 from Indonesia and one from Sierra Leone. In Mr Sa'ied opinion they should have joined in the work from the beginning to the end; namely, from building the enclosure, introducing the small fish, feeding, until the catch stage. This would require 4-5 months, but they were there only for 2 months and 10 days. Their original grant was for

four months!

The training received, although it could have been better, was appropriate to Mr Sa'ied's work in fish farms.

He feels that he needs follow-up training, provided he participates in a project from the first step of building the enclosures until reaping the harvest. He would then appreciate the difficulties of the farm.

He feels that training before the project is preferable. Visiting experts in his fields are of little value unless they participate in the practical work. It is better that trainees visit appropriate stations for periods which are long enough.

Mr Ezzat A. Badawi and

Mr Abdel Rahman A. el Shezly, are both abroad on the IDRC training mission.

Institutional Analysis - Institute of Oceanography &
Fisheries - Academy of
Scientific Research & Technology

A great proportion of the Egyptian population is suffering from lack of animal proteins, and every endeavour is made to remedy this situation. The Institute of Oceanography & Fisheries contributes to the solution of this national problem by increasing the fish catch from the seas and from inland waters. The Institute also introduced fish farming as a tool to augment the fish resources of the Country.

The project team leader and the trainees were exposed to the technologies adopted in the Philippines in the fields of cage^{and} pen culture. It was useful and beneficial that the team leader visited the same places which were later visited by the junior trainees. He could give them instructions before their departure to the Philippines, and after they returned home.

The interest shown by a commercial company to apply the results reached by the Institute in cage and pen cultures is an indication to the success achieved by IDRC project and the trainees.

The project leader proposed that some material incentive would be paid to the staff working on the project.

Recommendations

1. When the training is intended to introduce new technologies, it is recommended to have the project leader visit the training institutions.
2. IDRC should encourage the application of results reached by staff working in IDRC projects.
3. IDRC might consider paying the project staff some incentives. Nearly all foreign, and local, granting agents do this.

IV INTERVIEWEES RELATED TO FELLOWSHIPS

F- 76-6050-05 ADULT EDUCATION

Dr Abd al Wahed A. YOUSSEF

Arab States Functional, Literacy and
Adult Education Centre (ASFEC)

Sirs al-Layyan, Egypt.

- 4.1 Dr Youssif is a Sudanese. He is married with 3 children.
- 4.2 He obtained his B.A. in 1964 from the University of Khartoum in General Arts. In 1965 he got a Diploma in Education from Manchester University, and in 1968 he got the Master Degree in Education from the University of Leicester in England. He then got his Ph. D. in Education from the University of Toronto in 1978. His area of specialization is adult education.

The IDRC grant was in 1975-76, after which he was given a grant from Khartoum University for one year to continue for his Ph.D. degree in the University of Toronto.

His first job after graduation was as a tutor at Khartoum University, in the School (Faculty) of Education and Extension, which includes activities outside the formal curricula. After getting his M.A. he was appointed lecturer

at the same Faculty.

From 1969-70 he was seconded to the Ministry of Information as the Director of National Broadcasting in the Sudan. In 1971 he was appointed as the Director of the School of Education and extension.

From 1971-74 he was seconded to the University of Zambia as the Director of the University Centre for Continuing Education & Correspondance Studies.

He then returned to his post at the School of Education and Extension as its Director.

Between the years 1975-78 he was in Canada on the IDRC and Khartoum grants. In 1978 he took charge of ASFEC, in Egypt.

He does not consider himself lost from the research activities. In fact, he feels that his research is now more realistic and meaningful, as it is based on his field experience.

- 4.3 During the IDRC award he took courses and did research at the Ontario Institute for Studies in Education (OISE), which is part of the Faculty of Education, at the University of Toronto. He had an excellent opportunity to work in the type of setting that prevailed there. They consider the global outlook to education as a life-long process of learning.
- Dr Yousif quoted the Islamic saying: "Learn from Cradle to Grave", which is his motto.

He applied to the award because he wanted to know about the North American experience in education, specially in Canada. His former experience came from the Sudan and England.

He, himself, selected his courses, and he feels that it proved to be^a good program of studies.

He had no problems in applying to the grant which was accepted in August 1974. The delay in starting on his mission until Jan. 1975 was according to his own request. He was in Zambia when he was accepted, and he had to remain there until the end of his term of service there.

4.4 He was quite prepared for his training programme.

The stipend was quite adequate.

He, himself, did not have any trouble with his visa.

His family stayed with him in Canada for two years and then went back home. When they wanted to return to Canada, they had visa difficulties.

He had no problems with the language.

He had no advisor from IDRC, but, during his mission, he visited Attawa more than once for informal exchange of views with IDRC staff.

Monitoring training programmes depends on the level of the trainees. and he did not see it appropriate for himself. He discussed the programmes with IDRC experts as colleagues, not as supervisors.

He had no personal problems, as he had some friends in Toronto who arranged everything for him.

- 4.5 The subject matter during his mission was relevant. One thing that would have been useful to do there, is to have studied problems of development and underdevelopment in the Third World -not from the economic side, but from the human resources point of view.

The subject material of his research in Canada is directly related to his work. Many of the techniques and methods which he learnt there, he is now applying.

He feels that follow-up training will be very useful. Dr Yousif would like to study the Problems of poverty in many parts of the world, where there is no justification for this poverty. The material resources are there, but the poverty is related to educational shortcomings. The main tool for advancement is education. The time he needs for this follow-up mission is 6-12 months. His topic will be: Poverty and Education. He will work with colleagues who are capable and interested. The study can be a project undertaken with fellowship assistance. An alternative might be to identify

other poverty-stricken areas and Dr Youssif do a comparative study in these areas.

- - - - -

During the interview, Dr Yousif gave the following information about ASFEC.

The Arab States Functional Education Centre (ASFEC) is a Regional Centre established in Sirs al Layyan in Menoufia Province, with help from UNESCO. It has changed its name to Arab States Functional, Literacy and Adult Education Centre, but it still keeps its acronym ASFEC.

Its main functions are :

1. To train personnel from the Arab States in adult education and literacy.
2. Offer advice to Arab States as regards adult education and functional literacy.
3. Organize, and carry out research in the fields of adult education, non-formal education, rural development and literacy.

The Centre has four posts for UN experts which presently are not all occupied.

The teaching staff is composed of 6 persons trained by UNESCO, the residential capacity is for 120 trainees. At present there are no trainees because of the attitude of some Arab Countries. However, they

send mobile teams on projects to some Arab Countries to do the work.

- - - -

Dr Youssif is a Sudanese who was granted the IDRC fellowship while he was the Director of the School of Education and Extension in Khartoum. He was given a leave of absence by the University of Khartoum to continue his research for the Ph.D. degree in the University of Toronto.

Considered one of the best former trainees interviewed during this study, Dr Youssif now holds the post of Director of ASEEC in Egypt, which is potentially a very important regional centre for adult education.

Dr Youssif hopes that IDRC would grant him another fellowship to study "Poverty and Education".

F- 75-6050-13 MOBILITY & IDENTITY IN AN EGYPTIAN TOWN

Dr (Mrs) Sawzan al Messiri

4.1 Mrs al Messiri is 44.

4.2 Her speciality is anthropology and sociology. She got her B.A. and M.A. degrees from the American University in Cairo. She received her Ph.D. degree from Hull University in 1976.

After the IDRC grant she got another grant from AID to study "Poverty in Egypt". She is acting as the principal investigator in this project, which is carried out at the Islamic Centre for Population Studies, under Dr Fouad al Hefnawi. The AID grant will end next December.

She wrote a book entitled "Ibn al Balad, a Concept of Egypt Identity." Ibn al Balad means The Son of the Land. She also wrote an article on "Woman in the Muslim World."

Dr al Messiri worked as assistant at AVC for 3 years. She held a post-graduate fellowship for teaching in the Sociology and Anthropology Department.

She held a post of researcher in the Sociology Research Centre for 3 years, with teaching duties at the Centre of Arabic Studies Abroad (CASA). She used to teach sociologists in Arabic.

She is still very active in research.

4.3 She received the IDRC award to help her complete the Ph. D. degree from Hull University, U.K. Some Canadian college friends told her about IDRC, and the possibility of getting a grant. She applied to Canada and was referred to Beirut, then to Cairo when the Office was transferred from Beirut. She had already applied to Hull University two years before the award which she received in 1975-76. She got the degree a year later. She did the actual research in Egypt.

The academic training was received in England. She applied for the grant to help her in getting the degree which she considered the door to the scientific circle!

She chose Hull University because the staff there are aware of the Middle East problems.

There was no delay in her receiving the award.

4.4 She was prepared for the training courses in Hull. The stipend was adequate, and she had no troubles with travelling or with the language.

She did not think it necessary for IDRC to monitor the training programme.

She had no personal problems.

4.5 Dr al Messiri chose her own courses, so they were all relevant.

The courses helped her to learn the techniques and methods which are used in her work. They were part

and parcel of her job.

She considers that there is no end to follow-up training.

In the fields of sociology and anthropology training can be before and during the actual work.

This helps her to learn about the techniques which can be applied under the local conditions.

Her final report to IDRC will be sent after the final Ph.D. examination next September.

She proposes the creation of a new institute, of regional nature, in Egypt to help train people in the fields of social studies.

- - - - -

Dr al Messiri is a very ambitious lady who is full of enthusiasm for her work. She proposed the creation of a new institute of regional nature to train people in the fields of social studies. She did not seem to be satisfied with the Social Research Centre of the AUC, in which she held a post of researcher for 3 years.

Dr al Messiri have opened a number of channels with some donor agencies, AID being one of them. She was given a grant to study the topic of "Poverty in Egypt", at the Islamic Centre for Population Studies under Dr al Hefnawi.

F- 76-0155-02 NITROGEN FIXATION

Dr Mohammad Hussein al Halafawi

Faculty of Agriculture, Alexandria University

4.1 Dr Halafawi is 38

4.2 He is a graduate of the Faculty of Agriculture, Alexandria University, where he got his B. Sc. and M.Sc. He got an Egyptian Government scholarship to attend Louvain University in Belgium for his Ph.D. which he received in 1972. His studies in Soil Biochemistry were on the isolation and purification of enzymes responsible for oxidation in the soil.

He then went to Saskatchewan in 1978 to work on soil enzymes, particularly on nitrogenase, responsible for nitrogen fixation.

The interview with Dr Halafawi was only a few days before his departure again to Saskatchewan.

After graduation from the University he was appointed a demonstrator, and after his Ph. D. a lecturer at the Faculty of Agriculture, Mansoura University, where he served for 3 years. Because of the poor facilities there he succeeded in getting to Alexandria University in 1976, after doing 14 months military Service. He is now Associate Professor.

He is still very active in research and teaching.

4.3 Dr Halafawi was awarded a Pearson Fellowship to the University of Saskatchewan. He applied at the advice of Dr Kishk who works with him at the same department in Alexandria. He was interviewed and was asked to submit a plan of the work he intended to do in Canada on nitrogen fixation. He was one of the five chosen for this Fellowship from the developing countries. It was career aspirations behind his applying for the award. He wanted to get the chance for more publications so that he will have the chance for promotion to Associate Professor.

It was Dr Kishk who proposed the University of Saskatchewan, and the courses were arranged on his arrival. There were no problems with the University.

He had, however, some problems with the Canadian Embassy in Cairo. The telex sent from Canada to the Embassy concerning him was sent to a man who neglected it. Then he was asked to submit numerous documents to the Embassy. After two months he finally departed for Canada.

4.4 He was quite prepared for the training programme, seeing that he himself had proposed it. He had no problems with the stipend or language.

Dr Halafawi is also fluent in French.

He received good advice from Mr Alan Rix of IDRC who spent a day with him in Saskatoon. Dr Halafawi returned the visit later in Ottawa.

He does not find it necessary for IDRC to monitor training programmes.

He had no problems with food and reported no family difficulties. However, he found living conditions in Canada different from those in Europe. For example, he asked for a furnished flat, but was told to furnish his own flat. Later he found that this was good advice. His wife joined him three months after his arrival.

4.5 The courses he attended were relevant.

He did his research with an extremely busy professor. He would prefer to work with a less prominent advisor who could give him more time.

Dr Halafawi mentioned two points which apply to trainees in research:

1. If possible, the trainee should be put in contact with the future supervisor, who could inform him on the proposed research and send him details of the techniques likely to be used. As an example, he says that he had no idea about gas chromatography, but he could have read about it before starting on the mission.

2. It is advisable to receive reading material before starting the training mission.

Dr Halafawi advised the interviewees that he was preparing to leave for the University of Montana in a few days.

He said his award was not part of a project; however, pre-project training does serve a project, while post-project training serves the trainee. Either is important and useful.

There is great merit in inviting experts from abroad.

He felt experts coming to Egypt did not benefit undergraduates, only the staff! He also thinks that we spoil the experts, and do not derive all the possible knowledge from them, and that our working hours are too short.

- - - - -

Dr Halafawi added the following remarks:

1. He needs some small pieces of equipment, and a gas chromatograph which was the principal tool he used in his research abroad.
2. Library facilities in his field are in short supply. Apparently he had not heard of EDICA in the Ministry of Agriculture.

These remarks make one feel that it is essential to monitor IDRC trainees after they return to their

countries to know of any difficulties which they are encountering.

It is essential to bring together the staff who are receiving IDRC grants and those working in related fields.

- - - - -

Dr Halafawi is one of the mature Egyptian scientists who received IDRC fellowships. He is working on an extremely interesting and important topic, namely, nitrogen fixation.

Dr Halafawi started his scientific career at the University as demonstrator and went up the ladder to become an Associate Professor. He finds that he is short of some essential equipment and of literature on his subject.

A few days after he was interviewed, he travelled to the U.S. for further studies in his specialized field at the University of Montana.

It is expected that Dr Halafawi will soon put the results of his research to general application.

F- 76-6050-14 THE MASS MEDIA & SOCIAL CHANGES: FAMILY
PLANNING IN EGYPTIAN SOCIETY

2. GENERAL INSTITUTION

General Planning Department

Ministry of Social Affairs

Mr Mostafa Mohammed al Mahy,

Director General.

General Planning Department.

2.1 Since its inception in 1939, the Ministry of Social Affairs has been particularly involved in providing individuals and communities with the needed social services which help them in overcoming their own difficulties.

The Ministry has a number of departments, one of which is the General Planning Department, in which Mr Shaker A. Farag, the holder of the IDRC fellowship, is a staff member.

During the interview with Mr Farag at his department, Director al Mahy was present, and cooperated in giving some information about the department.

It is an extension department which operates at the central or macro level. Since 1978, the social planning units have been created at the village (micro)

level. The social unit may consist of a central village with a number of smaller satellite villages.

2.2 At the Central level the staff consists of 12 university graduates, B.Sc. or B.A., and several holding the M.Sc. degree. One member has the Ph.D. All have studied statistics, planning and population at the post-graduate level. They attempt to create the cadre of regional planners for the social units, with at least 1-2 graduates for each governorate.

The fields for qualification with the new staff, according to Mr al Mahy, are:-

1. Community development to instill the ability and mental attitude to help people to help themselves.
2. Knowledge of statistics.
3. Planning skills, with new staff spending about one year at the Planning Institute.
4. Ability to read and think for himself.
5. Applied social research.

When they have a research project, they usually incorporate in the team a university social researcher, or one from the Sociology Research Centre of AUC.

All their staff received their training in Egypt with the exception of Ph. D. and M.Sc. holders. However, the data and information they used was Egyptian content. Those who were trained abroad brought knowledge which enriched the experience of the local personnel.

In recent years the department has lost many of their staff to Saudi Arabia, thus creating a bigger load on those left behind. Mr al Mahy says they accept the situation as it helps many to improve their financial conditions.

Mr al Mahy convenes regular meetings with his staff to discuss technical matters, such as:

1. Fixing the targets of projects
2. Following up the results

Experts from abroad are not a source of manpower. At present they have Professor John Turner from the University of North Carolina on a 2-3 years stay. They are entirely satisfied with his work. He is helping with a project on how a social planning unit can fulfil its targets with the modest funds available to it. Mr Farag is working with him. The Department has always had foreign experts on staff and is always happy with them.

2.3 The Department is still building up the staff needed for the central level and social planning unit. They expect that the decision makers will be appreciative of their work and provide them with the required extra research staff. At present, their interest is in cost-benefit analysis of social projects, an area which will be appreciated by the financial authorities.

2.4 The Department has always laid great emphasis on training. They now concentrate on training the cadre at the governorate level in the planning processes.

They train their staff locally, and then send some of them abroad to see what others are doing.

On their return they train their colleagues^a. The trainees are lost for one year, but they gain experience which they bring back with them.

They sometimes second their staff to non-governmental associations for limited periods.

Mr al Mahy said voluntarism in social activities has religious roots and is deeply ingrained in the Egyptian culture, hence existed long before the creation of the Ministry of Social Affairs in 1931.

2.5 Mr Farag was the Department's trainee on an IDRC Research Award.

4. TRAINEE - Shaker A. Farag

- 4.1 Mr Farag was the trainee from the Department who received an IDRC research award. He is 38 years of age.
- 4.2 He received his B.Sc. degree from the Faculty of Agriculture, Cairo University, in 1955. He has since specialized as a rural social worker. For a month he attended a course in ASFEC, after which he was given a diploma. For the last eight years he has been the head of the social unit in the Department.
- 4.3 He applied for the IDRC award in response to a Government announcement which was made for the Ministry of Social Affairs. He attended courses at Central Washington State College, Ellensburg, Washington. When he arrived he felt lost between departments and disciplines. Dr Goodrick (mass media) arranged his programme and sent it to Ottawa for approval. He did not wait for the reply and started to attend the lectures. He also found time to attend the City Council meetings, and visit associations. At some stage he began to question the usefulness of the courses he was attending. Professor Kaufman,

a sociologist but not in the mass media field suggested he register for an M.Sc. degree. He did so in spite of the limited time available. It took one whole year from the time he applied until he was accepted. He says that the courier of his file from Cairo to Canada forgot it for some time before delivering it.

4.4 The interviewee felt quite confident when he arrived at the training institution because of his previous experience. He had also read widely on the subject. Everybody was helpful, and provided him with films and video-tapes. His stipend was adequate, and he encountered no visa or travel problems. He had no language difficulties.

Good advice was given by his IDRC advisor Mrs. Rohonczy. She was very understanding during his family crisis-his wife's illness which terminated in her death.

4.5 All the courses he attended were very useful and relevant. He chose his own courses, which amounted to 60 credits.

The training which he received is related to the work which he is doing now.

He would like to have follow-up training in order to earn his Ph. D. degree.

- - - - -

Mr Farag is one of the many agriculturalists who have been attracted to social work and planning. In spite of the very difficult family circumstances, he managed to register for a higher university degree while ^{he} was on his training mission abroad.

The Ministry of Social Affairs lays great importance to the planning of its activities. As a social researcher, Mr Farag is making a valuable contribution to the department of his employment.

F- 77-6050-04 PRODUCTION ECONOMICS AND FARM
MANAGEMENT

Dr Ahmed Fouad A. Khalifa

Agricultural Economics & Extension Department,
Faculty of Agriculture, Cairo University

4.1 Dr Khalifa is 50, married with three children-

4.2 He obtained all his degrees from the Faculty of
Agriculture, Cairo University: his B.Sc. in 1952,
his M.Sc. in 1966 and his Ph.D. in 1969. His
area of general specialization is Agricultural
Economics. The fine specialization is Agri-
cultural Production and Farm Management.
He did not receive any training after the IDRC
award.

After 1969 he was delegated to teach at the
University of Cairo, al Azhar and Assuit in the
Institute of Agricultural Co-operatives and
Extension. He was not appointed because he was
looking after his grape farm in Samallout in
Upper Egypt.

In 1972 he was appointed in Cairo University as
demonstrator, lecturer and later associate pro-
fessor.

In 1977 he was nominated for a Government fellow-
ship to go to the University of Wisconsin for one

year. This clashed with the IDRC award, as explained later, so he went to Wisconsin. Dr Khalifa is still active in teaching and research.

4.3 The IDRC award was to go to the Philippines for one year to work in the International Rice Institute (IRI). It came at the same time as the Egyptian Government scholarship to go to the University of Wisconsin. He preferred training at a developed institution and went to the USA. He visited Canada to explain his point of view, and it was accepted. The IDRC award was for a second year in Wisconsin.

In the first year he took some courses and did open research. In the second year he took other courses and did research in farm management.

Dr Khalifa wished here to say that IDRC views should be advisory rather than compulsory!

He sent his application in September 1977, and he was chosen from amongst 200 applicants. He later learnt that it was one member of the committee who proposed IRI for his training institution, but as a university man interested in teaching and research, a well known university was the proper place for him. Dr Khalifa wanted to stress this point, because he felt that he acted against IDRC'S advice.

The research chosen under the IDRC award could not have been done in Egypt because of the computer facilities which he needed.

He applied for the award to increase his capabilities in teaching and research.

4.4 He was quite prepared for his training programme, which was continuation to what he was doing in Wisconsin.

The stipend was adequate.

He already explained what happened with the original choice of IRI.

He did not need any monitoring during his training. He used to submit quarterly reports, and he thinks that this is enough monitoring of the training.

He travelled with his family, and had no problems.

4.5 Dr Khalifa needed to attend some extra courses, but he could not do so, and he had to rely on reading. He was able to teach some of his colleagues at home some of what he had learnt abroad.

He feels that he needs follow-up training to work on Resource Allocation which is given priority at the Ministry of Agriculture. The length of the second mission can vary from a few months to a whole year. For each period he can provide a suitable programme of work.

Dr Khalifa added the following about his Department at the Faculty of Agriculture.

The Department was created in the forties, but in 1962 it was developed with the creation of new curricula for Agricultural Economics, Sociology and Extension.

In the first year the student studies general agriculture.

He specializes in the second and third years. In the fourth year he chooses for his fine specialization only one the three topics:

Economics, Sociology or Extension.

The present head of the Department is Dr Taha K. She'eshaa. Dr Khalifa's Division of Economics has 1 Professor, 4 Associate Professors, 6 Lecturers and 5 Assistant Lecturers. They hope to increase their staff as they are helping some of the Arab and African Countries, to whom they delegate some members of their staff.

He feels that training abroad should be increased.

The big problem with university staff is their low salaries, which compels him to seek extra work outside his University.

Dr Khalifa is one of the few businessmen/scientists working as university Professor. This is in full accord with his specialization as an agricultural economist.

He still combines his work in teaching and research at Cairo University with his part-time occupation in operating his vineyards in Samallout, Upper Egypt.

F- 78-6050-09 RESEARCH & TRAINING IN PESTICIDE HAZARDS

Dr (Mrs) Nabila Mohammed S. Bakry

Faculty of Agriculture, Alexandria University.

4.1 Mrs Bakry is married and has 2 children.

4.2 Mrs Bakry graduated from the Faculty of Agriculture, Alexandria University, where she got her B.Sc. in 1958 and her M.Sc. in 1961. She was sent to the U.S.A. on a state mission and got her Ph. D. in 1966. She specialized in Plant Protection, with special reference to Pesticide Chemistry.

Mrs Bakry had no further training abroad after the IDRC award, which was in 1978-79.

Since her graduation she has been working with the Department of Plant Protection at the Faculty of Agriculture, Alexandria University. She is now a Professor.

She never intended to study agriculture. A friend of hers pushed her into it! She studied Chemistry and Botany and specialized in Pesticide Chemistry. She is active in both teaching and research.

4.3 The IDRC award was for one year. She first went to Duke University and then to the University of Miami to do research at the Epidemiology Department on Pesticide Hazards.

She applied for the award for career aspirations.

She was able to select the institutions in which she worked during the IDRC award because she previously knew the persons she planned to visit.

There were delays in her receiving the award after she applied for it, and then until she actually departed. She applied for the grant in January 1978, and she could not start until October of the same year. She said that the delays were caused by stray cabling.

4.4 She was quite prepared for the training programme abroad.

The stipend was enough, and she had no problems with visas or with the language because of her previous studies abroad.

She had no difficulties with the training institutions.

Mrs Rohanczy was her IDRC advisor.

It was not necessary to monitor her training programme.

She travelled alone at first, and when she ended at Duke University her family joined her. That was 3 months before the end of her mission.

She met with no problems at all.

4.5 All the courses she attended were relevant.

She actually took more courses than she expected. The training which she received was appropriate to her work in Egypt. Since her return she arranged a training programme guided by what she learnt abroad. She wanted to translate it into Arabic, and for this she approached the Ministry of Agriculture in order to disseminate the information to others. The Ministry welcomed the idea, and wanted her to do the training. She had no facilities to continue with the training programme. They also asked her very difficult financial questions, which she could not answer, about the money she needed. However, they sent her agricultural engineers to be trained in her department in Alexandria. The training was also open for nurses. The training has now stopped! She feels that follow-up training is needed. Duke University has already contacted her to return. She would not change her field of work, which is pesticide hazards.

- - - - -

Dr Nabila Bakry is the second Egyptian lady holding an IDRC fellowship. She is one of the few interviewees diligently seeking to apply the

results of their research. The Ministry of Agriculture is interested, but is not providing Dr Bakry with all the facilities she needs.

Duke University has already contacted Dr Bakry to resume her work there. She did not indicate whether she has succeeded in building up a cadre of research workers at the Plant Protection Department to carry on with the work in her absence.

V. ANALYSIS AND RECOMMENDATIONS

V. ANALYSIS AND RECOMMENDATIONS

A- Analysis

This study sought information about (i) the trainees in six IDRC-supported projects which have substantial training components, and (ii) six IDRC fellowships which were not part of projects. In (i) three projects were with the Ministry of Agriculture's Research Centre and EDICA; two with the Faculty of Agriculture, Alexandria University; and one with the Institute of Oceanography and Fisheries.

In (ii) six fellowship/trainees, two were members of the Faculty of Agriculture, Alexandria University; one was on the Faculty of Agriculture, Cairo University; one a former student at the American University in Cairo; one a social worker at the Ministry of Social Affairs; and the sixth a Sudanese currently director of ASFEC in Egypt.

Most of these awardees expressed general satisfaction with IDRC and the way it administered their projects and fellowships. Some went as far as to say that the Centre was the best foreign foundation with which they had dealt. However, in order to assess what the Centre has done in supporting training for Egyptians it is necessary:

- a- to assess the scientific and technological situation in Egypt; and
- b- to assess IDRC'S support in research training.

(a) The basic institutional infra-structure for science and technology in this country is well established. However, there are shortcomings and other problems, among them:

1. the almost total absence of research management, and the lack of importance given to the socio-economic impact of science and technology, science policy, and the multi-disciplinary approaches to solve problems.
2. the small numbers of endogenous capable technologists;
3. the small numbers of technicians;
4. sub-standard library facilities;
5. the frequent lack of equipment for research;
6. above all, the absence of any national or even at times, sectorial scientific and technological planning.

(b) The IDRC efforts in training are limited to the projects and fellowships which were described early in this section and which were granted to institutions or individuals who applied directly

to IDRC. There is great appreciation from these institutions and individuals for IDRC'S assistance. However, the important question is whether IDRC has helped the country in covering some priority areas!

In the absence of a well defined stable national development plan with indications to priority areas, IDRC can seek the advise of central bodies such as the Academy of Scientific Research and Technology and the Institute of Planning; or, for specific areas, the National Research Centre or the Agricultural Research Centre.

The following sums up the remarks made by the interviewees in response to the questionnaire:

1. All the trainees applied for the awards to better their scientific future in one way or another.
2. The senior trainees selected their own courses and training institutions abroad, while IDRC did the selection for most of the juniors.
3. There were some complaints of delayed communications which, in some cases, postponed commencement of training.
4. All the trainees were adequately prepared for the

training courses; a few encountered language difficulties.

5. The majority of trainees found the stipend adequate.
6. The senior trainees did not find it necessary to have their training programs monitored, while juniors did not have any views on the point.
7. A few leaders and trainees wanted less monitoring of project funds.
8. In a few cases financial incentives to the research staff were recommended.
9. A few trainees found it difficult to pursue their work at home because of lack of library facilities or equipment.
10. Some of the suggestions raised are in effect asking whether IDRC would consider institution-building support in a broad training project context and over a 10-year period, rather than grants of two or three years' duration.
This is a question the Centre might want to include for consideration in future program planning.

B. Recommendations

1. In view of the absence of an expressed national development plan -- on which a research plan could be formulated -- Egypt's national research bodies would be well advised to join hands in an extensive study of creating an overall research plan. The findings would explore, for the 1980's, the country's actual research capability, not alone on the basis of numbers of graduates and research personnel, but to define and search out excellence in research.

The research project might rate a cross-section of institutions as to quality of research, personnel (and the effect of emigration), budgets including salaries, equipment, etc. Finally, the study would give a comprehensive and realistic account as to how the entire research activity could be improved to meet, in particular, the nation's development needs.

Assistance could be provided by IDRC either for an extensive feasibility study, or for support of a portion of the study as a whole.

2. The President of the Republic is raising a challenge for "science and technology to serve society". In his recent various addresses to

members of the scientific community, he called on them to desert their ivory towers and devote most of their efforts to tackling problems which have a direct bearing on the social and economic state of the country.

IDRC can encourage the studies on the socio-economic impacts of scientific and technological activities, a field which is at present very much neglected in Egypt.

3. The Institute of High Administration arranges intensive short courses in administration to help the senior government administrators at the rank of Under-secretaries of State and the Director General, in improving administration of their departments.

Directors of research institutions do not, unfortunately, receive such training. In most cases a director is appointed to his post through seniority, while he has very little knowledge of research administration or science policy.

IDRC can render a very valuable service to the whole scientific endeavour in Egypt by introducing serious studies in some of the neglected fields, such as: research management and methodology, science policy and the inter-disciplinary approach to solve problems, in order to improve the performance and efficiency of

scientific institutions.

4. Some trainees find themselves abroad in well equipped laboratories where they can do complex research using highly developed and expensive equipment. On their return to Egypt they do not find such equipment and they become frustrated.

IDRC is advised to discourage trainees from pursuing the kinds of sophisticated research which they know beforehand they cannot continue back home.

5. Some IDRC trainees find useful applications to the results of their research. However, when they approach the respective authorities in Egypt they do not get the desired response, because they do not always submit their proposals in an acceptable manner.

IDRC should encourage and help trainees in finding applications to the results of their research.

Where applicable, an appropriation, should be included in the budget to initiate the application of the results, and say to produce the proto-type.

6. On their return home, some IDRC trainees find difficulties of the type that the Centre can partly

overcome, e.g., lack of literature, lack of equipment or a small grant to finalize a piece of work.

The Centre should arrange for follow-up of its trainees after they return home, in consultation with the employing agency.

Perhaps it would be profitable for former trainees to meet occasionally as a group of "IDRC Alumni" in Egypt.

7. There is general agreement among heads of research institutions that technicians are in short supply and that very expensive items of equipment are lying idle in all research institutions. There are many reasons behind this shortage of technicians, one being the lack of proper education.

IDRC is called upon to give more attention to the training of technicians in Egypt. The Centre can support some local training courses, to be organized by a national body as the Academy of Scientific Research and Technology, with the expert instructions provided by top technicians, who can instruct the instructors of trainees. These top technicians may often be external staff.

8. All the foreign granting agents operating in Egypt allocate a portion of the funds to incentives to the

research staff.

It is proposed that IDRC consider the question of providing the staff on IDRC projects with some financial incentives. This matter is on the mind of many researchers.

This practice has also helped, in some cases, in partly overcoming brain-drain.

9. Because of the language difficulties encountered by some IDRC trainees, it is proposed that the Centre make sure that the trainee has reasonable knowledge of the foreign country's language of instruction, or is given pre-training language instruction.

- - - - -

In conclusion, and on an altogether positive note, the majority of interviewees went out of their way to congratulate IDRC for its support of projects and training. They mentioned the Centre's image of reasonableness and understanding in administrative procedures and expressed the hope that IDRC would continue these commendable relationships.

VI. REFERENCES

VI. REFERENCES

- Academy of Scientific Research & Technology Annual Report, 1976
Research Plans and Projects for the Future, 1977 (Arabic)
The Academy Annual Conference, 1977 (Arabic)
Degree Holders, by Number and Profession (table)1978
Annual Report of Member Councils, 1979 (Arabic)
- Central Agency for Public Mobilization & Statistics Statistical Yearbook, July 1979
- El Kholy, Osman A. A Case Study of University/Industry Interaction in Modern Technology Transfer.
Science/Industry/Technology Interaction Meetings, Alexandria, 14-17 April, 1980.
A note on Technology in Relation to Basic Human Needs and Environment in the Arabic Region, ALESCO/ASPEN/UNEP Workshop, Nairobi
31 March to 3 April, 1980.
- Hafez M.M. Science & Technology Policy Instruments, (Egypt). IDRC, 1980
- Hopper W. David Time is Important. MAZINGIRA, UNEP, Pergamon Press, Oxford. No. 9, pp. 59-65, 1979

- Institute of National Planning, Ministry of Planning General Description of Activities, 1979
The Five-Year Plan, a Summary, 1978-82,
National Socio-Economic Development Projects for 1980
- National Research Centre Report on Activities, 1975-76
(Arabic)
Research Projects, 1980
Training Courses 1980
- Sebet, Abdel A. Science & Technology Policy and
Planning in the Arab Republic of Egypt.
Science & Technology for Development
IDRC No. 13 e, pp. 82-87, 1979
- Vinyu Vichit-Vadakan The Role of Research in Solving
Problems of the Developing Countries
A Third-World View. Give Us The
Tools, IDRC No. 13 e pp. 177-188, 1
- Younis M.I. Mahmoud, M.S.
& Hussein, Y.M. Research Project on Scientific
Manpower
Needs for Egypt Until The Year 2000
Academy of Scientific Research &
Technology, 1979.
- Zahlan, A. Science & Scientific Policy in the
Arab World. Research Centre for
United Arabs, Beirut, 1979
(Arabic)