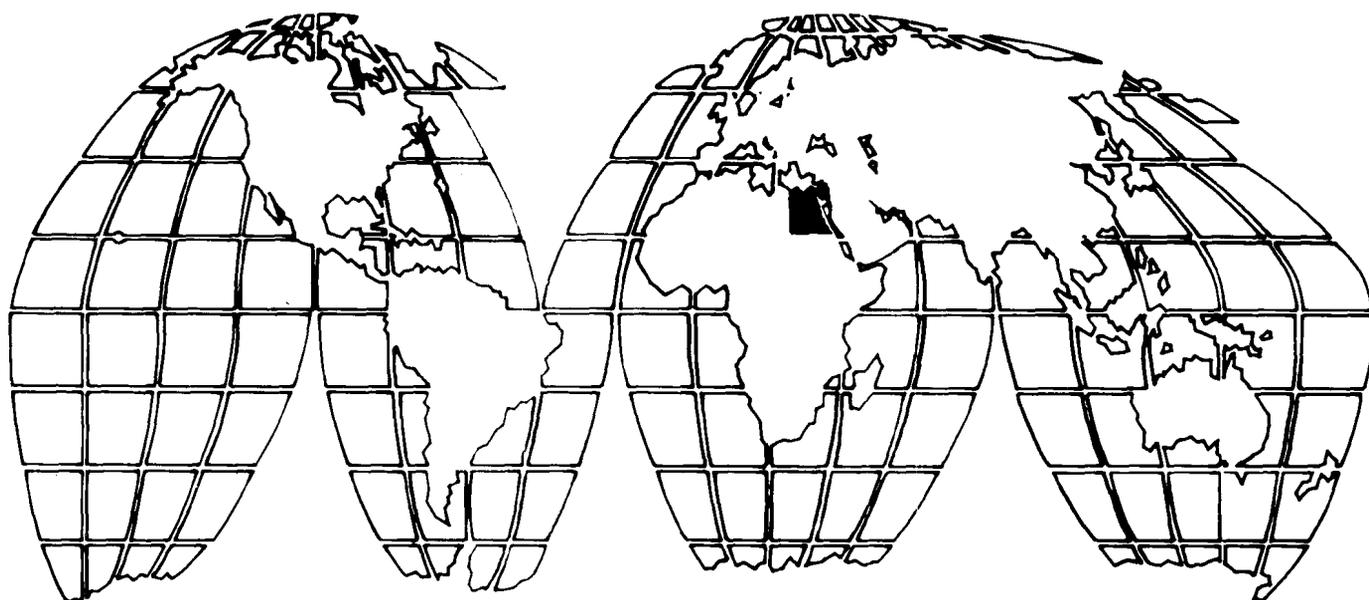


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A.I.D. Project Impact Evaluation Report No. 43

# **Egypt: The Egyptian American Rural Improvement Service, A Point Four Project, 1952-63**



April 1983

U.S. Agency for International Development (AID)

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EGYPT: THE EGYPTIAN AMERICAN RURAL IMPROVEMENT SERVICE,  
A POINT FOUR PROJECT, 1952-63

A.I.D. PROJECT IMPACT EVALUATION NO. 43

by

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U.S. Agency for International Development

April 1983

The views and interpretations expressed in this report are those of the authors and should not be attributed to the Agency for International Development.

### A.I.D. EVALUATION PUBLICATIONS

A complete list of reports issued in the A.I.D. Evaluation Publication series is included in the back of this document, together with information for ordering reports.

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FOREWORD

In October 1979, the Administrator of the Agency for International Development initiated a series of impact evaluations focusing on the impact of AID-funded projects. These impact evaluations are concentrated in substantive areas as determined by A.I.D.'s most senior executives. The evaluations are to be performed largely by Agency personnel and result in a series of studies which, by virtue of their comparability in scope, will ensure cumulative findings of use to the Agency and the larger development community. This study of the impact of A.I.D. Egyptian American Rural Improvement Service, A Point Four Project was conducted in July 1981 as part of this effort. A final evaluation report will summarize and analyze the results of all the studies in this sector, and relate them to program, policy and design requirements.

SUMMARY

The Egyptian American Rural Improvement Service (EARIS) project, supported under the Point Four foreign assistance program between 1952 and 1963, launched what remains Egypt's most successful land reclamation project.<sup>1/</sup> Altogether, EARIS reclaimed 37,000 acres of lake bottom and desert lands in three sites, built 13 complete villages and 64 satellite villages and resettled 7,500 landless peasant and laborer families. Each settler received a house, 3-5 acres of reclaimed land and a gamoosa (water buffalo) on a forty year repayment schedule. EARIS' major accomplishment as a model for land reclamation was to put the necessary inputs - land, water and credit - in the hands of the Egyptian farmer. It demonstrated the viability of small scale agriculture on reclaimed land, the feasibility of bringing both lake bottom and desert land into production and the adaptability of the Egyptian peasant to new social and economic situations. The model was not extended on a widespread basis as had been anticipated because of political shifts in the 1960's and the move to state farms on large tracts of reclaimed land.

The largest of the three sites, Abis, twelve kilometers from Alexandria, is the most successful. From Lake Mariut 30,000 acres reclaimed are maintained by an extensive system of drains and round-the-clock pumping. Nine villages were built and settled by 6,000 families beginning in 1955. Today, farm income and wealth have risen dramatically in the project area. Estimates for net agricultural revenues range from LE 1300 - 2200 per household, up from LE 185 in 1962. Average holdings of large animals have increased from one to nearly four per household. The value of the agricultural land reclaimed has soared to LE 4000 per acre, some LE 96,000,000 for the cultivable acreage in Abis. Individual and cooperative investments have permitted farmers to intensify land use, to exercise control over the marketing of farm products through retail outlets in Alexandria and to perform processing operations, such as cheese-making and milk-cooling, which add value to their agricultural products. Approximately 25 percent of cropland is devoted to high value vegetable production largely directed to Alexandria's markets. In addition wheat, barley, rice and berseem are grown at levels of productivity comparable to or higher than levels on the Old Lands.

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<sup>1/</sup> In his inaugural speech, President Harry S. Truman set out four major courses for action in his administration; "Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of under developed areas" (Jan 20, 1949). What thus became known as the Point Four program was administered by the Technical Cooperation Administration.

The physical signs of prosperity can be seen in the villages: roofs stacked high with agricultural produce, streets covered with wheat about to be threshed, television antennas and additions to houses. In a sample of fifty households in one of the towns in Abis, forty-nine have added a room to their houses, 45 have painted the houses. Almost all have a radio, more than half a television. Trucks and cars owned by farmers are commonplace. Literacy has also increased significantly. When the first settlers arrived, only 20 percent of the household heads were literate. Today, 53 percent of the younger generation in the sample area can read and write.

The two desert reclamation sites at Qoota and Kom Osheim in the Fayoum, totalling 7,000 acres, have not fared as well. While the land reclaimed is potentially highly productive, severe shortages of irrigation water mean that only a fraction of the land is currently in production. Spontaneous private land reclamation up the feeder canals is withdrawing, legally and illegally, the areas' water allocation. Some of the 1600 settler families have abandoned their farms. Many of those who remain depend upon the remittances from sons who migrate periodically to Cairo to work as semi-skilled laborers.

The evaluation drew the following lessons from this mixed picture of development:

1. EARIS succeeded as a project because it coincided with Egypt's top political and developmental goals. The full Egyptian participation in planning and implementation that followed from this commitment meant that, despite two interruptions in American assistance to Egypt (1956-1958 and after 1967), the physical infrastructure planned was fully constructed by the Egyptian Government.
2. EARIS was established as a semi-autonomous, independently funded organization. This autonomy facilitated the implementation of the project. However, the transition from administration of the project areas by EARIS to the line ministries was marked by an almost precipitous decline in services and maintenance.
3. The construction of unrealistic levels of infrastructure, the lack of planning for long-term maintenance and inadequate budgeting for recurrent costs have meant that virtually all of the infrastructure built by the project - roads, electricity, potable water systems, sanitation systems, health clinics and schools - has deteriorated.
4. Where irrigation water is assured and farmer choice is permitted, small farms on reclaimed land are financially viable and highly productive after an initial "gestation" period.

5. Proximity to an existing population in the case of the successful Abis site, provided free dairy and poultry markets for high value vegetable products. And most importantly, this proximity fostered economic diversification and offered access to additional employment, education and services. The development of some infrastructure, such as schools and health facilities, could have been planned much more gradually to capitalize on existing nearby services.

6. Water management has proved to be the single greatest constraint to productivity on these New Lands. In the case of lake bottom lands drainage problems reduce productivity. On the desert margin, basic supplies are inadequate as upstream farmers use water allocated for downstream sites. The problem appears to be one of water management rather than an overall water shortage. To date, the desert margin communities have sought bureaucratic and legal redress in an unresponsive setting. A responsible local administration, area wide planning and appropriate technologies for water use are all required. Water management deserves extremely close attention in any New Lands activity. In desert sites, water conserving irrigation technologies must be given serious consideration.

7. On-site population increase has absorbed many project benefits. Land holdings will, inevitably, be fragmented. The second generation is seeking opportunities off the land. More attention should have been paid to a diversified economic base which might have helped to provide for future generations. On the national scale, land reclamation and resettlement cannot be considered a response to the land pressure caused by a growing population. To absorb Egypt's current population growth on new lands, the team estimated that a project of similar scope would have to be constructed every 22 days.

8. American assistance did make a difference. American funding served as a catalyst to support and focus Egyptian interest and technical skills in land reclamation. American equipment led the mechanization of Egyptian reclamation techniques. American approaches to training - hands-on and practical - influenced a generation of Egyptian technicians who still refer to the "EARIS school."

PROJECT DATA SHEET

1. Country: Egypt
2. Project Title: Egyptian American Rural Improvement Service (EARIS)
3. Project Number
4. Project Implementation
  - a. Cooperative Agreement Signed March 19, 1953
  - b. Suspension of American Assistance November 1, 1956
  - c. American Assistance resumed March, 1959
  - d. Final Obligation June 3, 1963
  - e. EARIS phased out December 3, 1964
5. Project Completion - Final Disbursement 1963
6. Project Funding:

	<u>1953</u>	<u>1959-64</u>	<u>Total</u>
a. AID Total	\$10,000,000	\$ 6,360,000	\$16,360,000
b. Other Donor	0	0	0
c. Host Country	\$15,000,000	11,220,000	26,220,000
Grand Total	<u>\$25,000,000</u>	<u>\$17,580,000</u>	<u>\$42,580,000</u>

7. Mode of Implementation:
  - a. Cooperative Agreement between United States Overseas Mission/Egypt and the Government of Egypt.
  - b. Project Agreements signed by EARIS Co-directors and implementing ministries
8. Evaluation:
  - a. Monthly reporting by EARIS administrator
  - b. Special Evaluations 1957, 1963
9. Responsible Officials During Life-of-Project
  - a. Mission Directors: John R. Nichols, Adm. Harold Stevens
  - b. Task Force Chairmen: A. B. Bonds, Erwin Hannum, Roscoe Bell
  - c. EARIS Administrators: M. M. Azzouni, Rifky Anwar
10. Host Country Exchange Rates:
  - a. Name of Currency - Egyptian pounds (LE)
  - b. Exchange Rate at time of Project - LE 1 = \$2.93 (1953)  
LE 1 = \$2.40 (1964)  
LE 1 = \$1.44 (1981)

CONVERSIONS

Area: 1 feddan = 1.04 acre = hectare

Commodity Measures: 1 ardeb = 198 liters = 5.62 bushels (U.S.)  
1 ardeb/feddan = 5.41 bushels/acre  
1 kg./feddan = 2.12 lb./acre

PREFACE

This evaluation of the Egyptian American Rural Improvement Services project (EARIS) departs from the approach used in other studies in the impact evaluation series. Initiated in 1952 under the Point Four foreign assistance program, EARIS is, first of all, the oldest project to be evaluated. An evaluation of impacts takes on a different meaning when a full generation of beneficiaries has matured and significant development has occurred in other areas. In addition, seventeen years have elapsed since the termination of American assistance. The remaining project files are incomplete and almost all of the U.S. staff who worked on the project have retired. This fact required a methodology combining document retrieval, oral history and political history of the 1950's (See Appendices D and I).

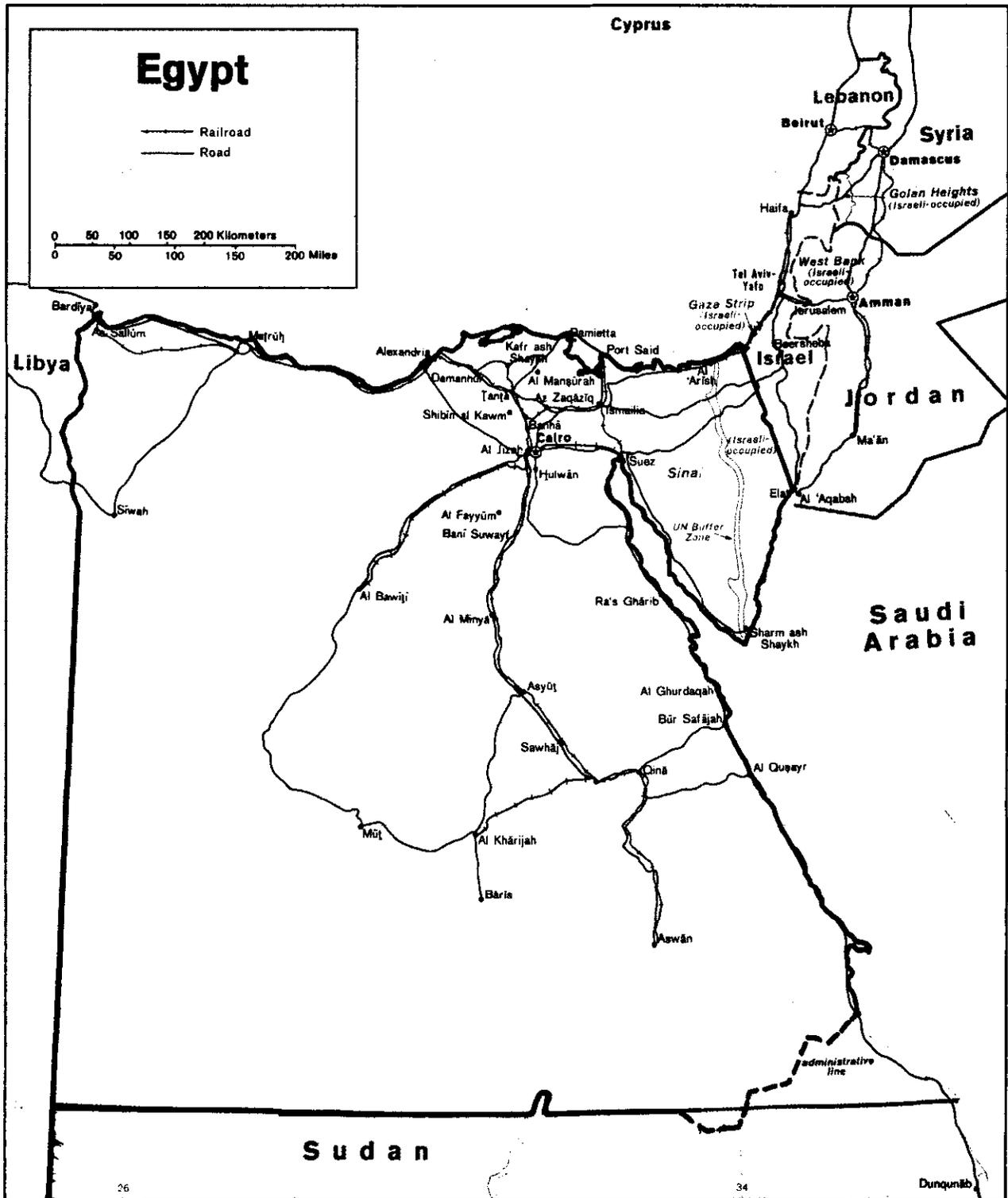
EARIS, despite the fact that it was begun nearly thirty years ago, seems almost contemporary in its aims to achieve integrated rural development, its focus on the poorest members of society, and its approach using a mix of technical assistance, commodity imports and direct support of local costs. In several respects, an evaluation of it was seen as directly relevant to important aspects of today's A.I.D. assistance program to Egypt. This early effort at community development has been expanded in USAID's current support of administrative decentralization. Land reclamation, resettlement, and expansion of infrastructure still command both U.S. and GOE interest.

For these reasons the Near East Bureau, the USAID Mission in Cairo, and the Government of Egypt joined PPC/ES in providing support for the project. Four supporting documents resulted. Patricia DeButts searched archives in the United States and abstracted project files; Professor Richard Dekmajian located and interviewed twenty two American foreign assistance personnel associated with EARIS and prepared an analytical history of EARIS and American Foreign Assistance during the period 1953-1965 (AID Work Order No. OTR 0000-85-1026-00). Hind Khattab and Mohey Khattab, who, as young Egyptian graduates had worked for EARIS, carried out a survey of fifty households in each of the three project areas and interviewed Egyptian participants and staff members.

The Evaluation team reviewed all of these documents and spent May - to June - in Egypt. In this three week period, the team visited all thirteen villages constructed by EARIS and many of the satellite villages. We talked to settlers and their sons, to a carpenter who has joined one of the communities and to a religious leader who was about to leave. We sat on mats and talked to a widow who farmed her own land and to girls attending secondary school. In

each area, we interviewed Ministry and cooperative officials, the doctors, shopkeepers and, despite school holidays, some of the teachers. Even where the communities had faced difficulties, the individuals and the officials were both generous with information and frank in their assessments. The only limitation was time. One hesitates to acknowledge any individuals for fear of failing to mention others who assisted us, but the assistance of Rifky Anwar, Azzouni, Ahmed Diffrawi, and Anwar El Abd of the Ministry of Land Reclamation.

USAID/Cairo fully supported the evaluation team. We owe special thanks to Mission Director Donald S. Brown, for his interest and to Mission staff members, especially William Steckel and Richard Fraenkel of the Program Office, John Roberts of Local Area Development and Graham Kerr.



## I. PROJECT SETTING

One of the world's oldest agricultural economies, Egypt depends upon the 'fruits of the narrow ribbon of cultivated land adjacent to the Nile and of that river's rich fan-shaped delta (Map One). For more than 5,000 years agriculture has sustained Egypt. During the first half of this century, however, despite the expansion of Egypt's cultivated land area (Maps 2-7), the growth of agriculture failed to keep up with the needs of a population which doubled, then nearly tripled. It is a matter of simple arithmetic. At the beginning of the century there was an acre of cultivable land for every two Egyptians; by the mid-fifties the ratio was one to four (Figure 1). Once self sufficient in food, Egypt grew increasingly dependent upon imports to sustain its people. In 1951, Egypt imported 40 percent of its grain. At the same time, 97 percent of

E Previous Page Blank / uncultivated.

The recognition of these facts led to new policies directed toward Egypt's rural areas. At mid-century, the government stepped up the reclamation of new lands, begun under Mohamed Ali a century earlier, to help sustain the burgeoning population. The 1952 revolution also focused attention on social reforms in the rural areas. Although the post revolutionary vision of Egypt oscillated between an industrial and an agricultural nation, the focus in the early years was on agriculture. A series of social and economic reforms, were introduced, notably substantial land reform and redistribution, designed to broaden the base of Egyptian agriculture. The Egyptian peasant, tradition-bound, at work with his hoe on the vast landholdings of rural landlords became a symbol of the revolution. A new peasant, owning his land and a house in a modern village, a healthy and educated citizen, became the symbol of the modern agricultural nation that Egypt would become (see Appendix D for a full discussion of the socio-political context of EARIS).

Vast land reclamation efforts were contemplated in the post-revolutionary period to respond to these dual imperatives: the expansion of agricultural land by millions of feddans and the creation of a new rural social order. The Aswan High Dam was a centerpiece of this bold planning. It would supply the water to reclaim 1,300,000 acres as well as supplying the Old Lands with perennial irrigation water. The Government of Egypt initiated a series of land reclamation projects in anticipation.

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2/ One feddan = 1.038 acres

## II. PROJECT DESCRIPTION

The Egyptian American Rural Improvement Service Project (EARIS) directly addressed two priority objectives, rural development and the increase of agricultural land. Established by a cooperative agreement signed by the Egyptian and U.S. governments on March 19, 1953, under the Point Four foreign assistance program, EARIS, in the most general terms, planned to demonstrate an integrated approach to the social and economic development of the Egyptian peasant. It was anticipated that the model, based on the reclamation of land and the creation of new communities, would be extended to the land put into production after the completion of the High Dam at Aswan.

The goals that the agreement set were wide in scope and ambitious:

1. The reclamation of approximately 80,000 feddans of new land.
2. The construction and development of improved housing and community facilities.
3. The resettlement of approximately 16,000 landless farm families on reclaimed land.
4. Financial and other assistance to farm cooperatives.
5. Demonstrations of improved water conservation and management practices and the extension of irrigation, drainage, and navigation services to new lands and lands now under cultivation.
6. The establishment of vocational schools and environmental training of farm youth in the fundamentals of scientific agriculture and irrigation practices.
7. The provision of agricultural extension and demonstration services.
8. The improvement of the marketing and processing of farm produce.
9. Improvement of the levels of public health, through environmental sanitation, clinical services, training and health education.
10. Aid in the development of small industries and handicrafts.
11. The improvement and development of farm-to-market road systems.
12. Such other related activities as the co-directors may agree upon as being essential to the success of this

demonstration in community development and rural rehabilitation.

From the beginning, EARIS was joint-funded. In the program agreement, Egypt and the United States agreed to contribute fifteen and ten million dollars respectively (see Project Data Sheet). U.S. support, interrupted between 1956-58 by the Suez Canal Crisis was resumed in 1959 with an additional dollar contribution and, in 1961 and 1963 final contributions from excess foreign currency funds, totalling the Egyptian pound equivalent of \$6,360,000. Total project funding was \$42,000,000 of which \$16,630,000 represented the U.S. contribution. In addition to cash contributions, the U.S. supplied direct hire technical assistance and a significant amount of surplus equipment.

Shortly after the Technical Cooperation Agreement was signed, EARIS was established as a semi-autonomous agency, overseen by Egyptian and American co-directors and responsible to the National Production Council. Its mandate was to carry out land reclamation and resettlement in Buheira and Fayoum governorates.

Egyptian-American task forces in land reclamation, agriculture, housing, public health, community development and education developed plans which were executed through a series of sub-agreements. These set somewhat more modest goals than the original agreement. EARIS was to reclaim 33,000 feddans, (later extended to 40,000) and to demonstrate improved agricultural techniques to bring the reclaimed land to maximum productivity. EARIS would construct 10-12 model villages and resettle 8,000 landless families in new communities. Finally, EARIS would foster community participation and organization, improve community health and environmental sanitation and extend and improve the rural educational system in the new villages.

EARIS selected three sites, one at Abis, near Alexandria in Buheira governorate, and two smaller sites in the Fayoum, Qoota and Kom Osheim (see Map 1). The sites represented the two ecological extremes of land reclamation in Egypt. Abis (Map 2) included the swampy shores and bottom land of the eastern portion of Lake Mariut. The Fayoum sites were desert lands, like the bulk of Egypt's uncultivated land (Maps 3 and 4).

After ten years, the project's accomplishments were impressive. Just before joint funding ended in 1963, an evaluation noted that 30,570 feddans of lake bottom and desert land had been reclaimed and were under cultivation. The canals and drains for 37,100 feddans were in place and two major drainage pumping stations were in operation. 3,712 families had been resettled. Seven villages with 4,500 houses, hospitals, clinics, mosques and schools were complete. Five agricultural cooperatives had been formed. Although the time required had been underestimated, 30,000 feddans had been reclaimed and many had passed the break-even point known in Egypt as marginal productivity.

Although EARIS was disbanded as an organization in 1964, and despite the severe deterioration of Egyptian-American relations, Egypt successfully continued the project and realized EARIS' physical targets by 1967 (Appendix C). A final 6,000 feddans were reclaimed and six additional villages were completed. This was the most important period of resettlement as well. Nearly 4,000 additional families were resettled, bringing the total to 534 settler families. Only in the third site Kom Osheim was one planned village not completed. The total acreage reclaimed, 37,100 feddans, fell about 10 percent short of the goal of 40,000.

A listing of physical accomplishments, however, does not convey the overall significance of a project which was tied at its inception, so closely to Egypt's national goals and through the years was identified with American assistance and American options. Although the acreage reclaimed by the project was small relative to the large state farms, throughout the period of Soviet influence and national policies of state farming and industrialization, EARIS was always referred to as the American project and singled out because of its success. To the present, it is identified by many Egyptians as the most successful American assistance project of the Point Four era and as Egypt's most successful venture in land reclamation.

### III. PROJECT IMPACTS: FINDINGS

Eighteen years since the end of U.S. assistance to EARIS, most of the accomplishments of EARIS have endured and flourished. In statistical terms, more than eighty percent of the agricultural land reclaimed is currently in production, considerably above the national average of 57% of reclaimed land under cultivation\*. The vast majority of settlers and their descendants have remained on the land. They possess provisional titles to their fields and houses. Some settlers have already completed payments and now possess full titles to their farms. Agricultural cooperatives have been established in all of the areas and provide a wide variety of services to their members. Communities have built additional classrooms and new mosques.

Despite these achievements, the team found that today, the picture of success must be qualified. The two Fayoum sites suffer from critical shortages of irrigation water, a lack which has had broad ramifications for the well-being of the communities and their members. Ironically, the communities are in some ways victims of their own success. The demonstration of the feasibility of desert land reclamation, combined with the demands of growing populations has encouraged spontaneous land reclamation upstream by farmers who draw down on Qoota and Kom Osheim's water allocations.

Although there are characteristics common to the three sites, the contrasts between them are striking. Abis the largest area reclaimed is, today, almost enveloped in the sprawl of Alexandria. There is variation within the Abis area, but, overall, farm income has risen dramatically. Estimates for net agricultural revenues per household range from LE 1300 in the newer areas to LE 2200 in the most prosperous villages, up from LE 135 in 1962 (See Figure 2). Average holdings of large animals have increased from one per household to 3.7. The estimated land value of the average agricultural holding in Abis is currently 15,200 LE. Other assets such as houses and livestock have also increased in value. Individual and cooperative investments have permitted farmers to intensify land use, to exercise control over marketing through retail outlets, and perform processing operations which add value to the agricultural products they produce. The physical signs of prosperity can be seen in the villages: roofs stacked high with agricultural produce, streets crowded with wheat waiting to be threshed, television antennas and additions of second stories, new rooms and porches. Trucks and cars owned by farmers are commonplace. Televisions, newspapers and frequent bus service connect the communities with the world at large.

Few of these signs of prosperity are encountered at the two smaller sites of Qoota and Kom Oshiem where income level and family economic strategies of wage labor and rural-urban migration resemble

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\*UNDP Report, Suez Canal Region Integrated Agricultural Development Study, P.2.

those of landless rural poor. There, family income is largely a function of the number of sons who are able to migrate. Desert outposts on the fringes of the rich agricultural providence of Fayoum, they have been plagued by a chronic lack of irrigation water as upstream users have diverted their allocations. Although they enjoyed high agricultural yields for a few years, today the promise of prosperity is only a memory. Farms throughout the two sites operate at a fraction of their capacity on meager water rations. The mainstay of both areas' economies are the remittances from sons who migrate to Cairo, augmented, at Qoota, by a cash crop of onions. Average farm incomes are low, an estimated 290 LE at Kom Osheim, LE 312 at Qoota. Farmers have been obliged to sell livestock acquired in earlier, more prosperous years. Holdings of large animals have been reduced to an average of 1.7 animals per household in Qoota, one in Kom Osheim. Many of these animals, too, are owned in share with outside investors.

In long-term development terms, Abis and Fayoum are almost mirror images of each other. In Abis, the intensification and exploitation of the agricultural base and rising net worth have permitted the internal generation and accumulation of capital in both the traditional and modern economics. Farmers have been able to obtain credit both collectively and individually and to expand and diversify investment. Investments in trucks and retail outlets permit farmers in Abis to exercise greater control over the marketing of their agricultural produce. Although the agricultural cooperatives are active in marketing some crops, farmers have also emerged as middlemen, particularly of horticultural crops. Investments in food processing, such as milk cooling and cheese making, have resulted in value added to agricultural products. In addition, a whole range of secondary activities have developed. Mechanics, welders, water wheel manufacturers, carpenters, builders, barbers, tailors and a wide variety of retailers provide services to both the agricultural and to the expanding consumer sector.

The Fayoum sites, in contrast, suffer in a downward spiral of depleting capital resources. Divestment of livestock, particularly, contributes to a ratchet-like decline of agricultural productivity. Large animals, important as a source of income from milk products, calves and meat are also critical for successful exploitation of the land for tilling, transportation, lifting water and supplying manure. As land use has de-intensified and productivity declined, so have land values and revenues. Farmers have been unable to cover their debts to the cooperative. Credit opportunities have contracted. Even such key agricultural inputs as fertilizers are available only on a cash basis in some cases. In these sites we did not see examples of value added to agricultural produce through either external marketing or processing. Although new lands farmers are permitted to market outside of the cooperative, neither the farmers nor the agricultural cooperatives have the resources to market surplus crops directly as has occurred in Abis. In Qoota, the cooperative has contracted with two public sector companies to sell onions for export. Further, the farmers rely on middlemen from nearby towns to supply additional agricultural inputs and to market

surplus produce. Both farmers and cooperative officials describe the role of these middlemen as exploitative. It does appear to be the one point in the Fayoum sites' economies where accumulation of capital is taking place. Even local marketing appears to be externally dominated. The cars and trucks of traders that come on market day are from other towns.

#### Impact on Agricultural Productivity

EARIS achieved its basic objective of creating productive land. It demonstrated the feasibility of bringing both desert and lake bottom lands into production. The magnitude of the impact on productivity is dependent upon the total acreage in production and the actual crop yields.

Of the total acreage reclaimed the team estimates that 80 percent are currently in production, a figure which compares favorably with national averages. Of land reclaimed in Egypt since 1952 only an estimated 57 percent is currently under cultivation. (Vol. 1979). Considering Abis only, the project has enjoyed spectacular success in bringing and sustaining reclaimed land in production, while the two Fayoum sites are estimated to be operating at about 37 percent of capacity.

Diversion of project lands to other uses and mismanagement of water resources are the principal causes of the reduction in productive acreage. First, portions of the reclaimed land have been diverted to alternative uses. This has been particularly the case at Kom Osheim (see Map 5). Of the 2,694 feddans originally reclaimed, only 1,700 feddans were distributed to settlers. Five hundred and nineteen feddans were converted for use as an airport and an additional 475 feddans were assigned to a public sector meat company. Similarly in Abis, some acreage destined for settlers has been assigned to a public sector cattle ranch and a small amount was distributed in 20 and 30 feddan parcels to agriculture college graduates.

Unlike elsewhere in Egypt, the project's agricultural land has not been diverted to residential, industrial or commercial uses to any significant extent. Residential expansion has for the most part been vertical not horizontal. Households have built additional stories and intensified use of open spaces as families have increased in size. The in-migration of laborers and craftsmen has resulted in some residential construction but this has been almost entirely confined to the open spaces and wide streets in the villages. In the long run, it is likely that diversion to non-agricultural use will increase, especially in Abis where land pressure is already growing. Some industrial construction has taken place along the main highway where property values are estimated to be nearly ten times greater than average. Long range plans and projections for the Alexandria area show Abis surrounded by industrial and residential development in the next two decades. One can anticipate that significant portions of the reclaimed land will be converted to high-value non-agricultural uses in the future.

The single most important cause of project land being out of production has been problems of water management and a resultant lack of irrigation water. Summer cropping has been all but eliminated from the two Fayoum sites and winter cropped acreage substantially reduced. In both Fayoum sites, although all farms suffer from reduced water flows, the farms at the ends of the canals are the hardest hit (see Maps 3 and 5).

In all three areas, farmers have reclaimed new lands immediately adjacent to project sites, relying on the project's infrastructure and on the technology of reclamation developed and demonstrated by EARIS. There is considerable irony in the fact that Qoota and Kom Osheim's success has contributed to the spontaneous up-canal reclamation that now competes for their water allocation. If one considered these additional lands in calculating indirect project impacts and measuring its success the spin-off effects would be considerable. At the same time, the beneficiary picture would change substantially. Upstream land holdings are larger and the landowners have the greater capital resources needed to reclaim their own land and to invest in such equipment as pumps.

An additional problem has had a more restricted impact on Abis Extension where land reclamation was expanded in the late 1960's without sufficiently enlarging pumping capacity. A U.N.D.P. report describes the situation:

Yields improved quickly in the early years and by 1972 were close to national average in the case of rice and broadbeans although still only 66 per cent of the average for wheat and maize. Since then, they have deteriorated for a variety of reasons of which the most important is resalinisation. Water shortages are evident from the fact that no rice is cultivated near the tail of the irrigation system and that farmers resort to using water from the saline Umum drain.... It is also in these areas that the water-table is nearest the surface resalinising the soil if the salts are not continually leached out. The drainage pump station has insufficient capacity to lower the watertable..... Annual shortages of irrigation water, poor drainage and the high watertable are now reversing the process of reclamation. (Hunting Technical Services 1979: A-13)

Yields on the watered EARIS sites approximate and in the case of rice and onions exceed national levels. EARIS' planners anticipated that with the mechanization of agriculture and the introduction of improved techniques yields would be significantly higher. Verbal accounts of the early years do suggest that while EARIS was still involved in agricultural development and extension this may have been the case. Today, however, yields are average. Most of the crops and the agricultural techniques in use are those

with which the farmers were already familiar. Similarly, the pattern of mechanization seems to resemble other areas in rural Egypt. Most field operations are done by hand using traditional techniques. The use and ownership of tractors has grown in Main Abis but declined in the other sites, since the days of EARIS.

In the Main Abis area, horticultural crops have assumed particular importance, reflecting the proximity to Alexandria's markets and, most probably, the skills of some of the settlers who had previously been vegetable farmers. The cooperatives lobbied successfully to have the area declared a vegetable zone and farmers are exempted from the requirement to grow and market cotton at controlled prices. Today, one fifth to one quarter of the area is devoted to high value vegetable crops. This contributes substantially to farm incomes but does not by itself, account for Abis' success

From the points of view of both cultivated acreage and average or above average yields, EARIS can be called a success. Its impact on national levels of agricultural production, however, was limited. The area reclaimed by EARIS represents a small percentage of land reclaimed during the post-revolutionary period. One major impact was indirect, the adoption of mechanized reclamation techniques and the use of equipment introduced by EARIS on other new lands projects. In addition, the model of small holder settlements has been followed elsewhere, currently in a World Bank/GOE land reclamation project.

#### Impacts on Beneficiaries

The impact of the project on the income and wealth of the direct beneficiaries has been enormous. In rural Egypt, land ownership is the single most important determinant not only of wealth but also of rural income. Receipt of a provisional title to fields ranging from three to five feddans and a house has changed their status from landless labor to landowner with a whole range of resultant benefits. The opportunity to own real assets, especially land, is no doubt the most significant and enduring impact of EARIS on the landless and near landless settlers. The settlers escaped from the category of the landless when, nationwide, the proportion of landless rural peasants was increasing. They became small landholders while, despite land reform, the percentage of small holders held constant. And, they acquired three to five feddans in a period when the average size of a small landholding fell from 1.2 to 0.9 feddans. Despite substantial variation in current productivity, land values have increased in all three areas.

At the time the project was designed, the rural population was seen as relatively immobile in both residence and employment. In the wake of two decades of rural mobility and migration, it is hard to reconstruct the ambitiousness of undertaking to resettle 8,000

rural families. An observer who watched a specially decorated train carrying settlers from Beni Suef past thousands of cheering well-wishers, to Qoota, recalls, "It was as if they were moving to a foreign country. They were pioneers".

It was anticipated that, having settled, the populations would be permanent and stable in the new locations. An early evaluation criteria was the small number of settlers who had left. In-migration was also discouraged, being seen as a deviation from an ideal community design rather than as a hallmark of the vitality of a changing community. Nonetheless, there has been substantial population movement in the form of both in-and out-migration.

Because of the failure of agricultural productivity in villages without water, migration has assumed an unanticipated importance in those sites. As one settler reports, "we live and eat off Cairo". In Qoota, 90 percent of the households surveyed had a family member who was a migrant laborer, 100 percent in Kom Osheim. Young boys, even from the age of twelve, are recruited in the villages by labor contractors and taken to Cairo to work as semi-skilled laborers in construction. In addition, some families in Qoota and Kom Osheim have abandoned their land entirely and returned to their villages of origin. Their numbers are growing and the team feels that the next two years could see further marked declines in population, especially in Qoota, unless some resolution to their water problems is forth-coming.

In Abis, in contrast, many members of the second generation see their future on the land. Although initially there was little planning for the second generation, the Abis cooperatives are, today, seeking to create new job opportunities for their sons in agro-industries. The manager of the small cheese factory in Abis is an example of a son of a settler, who was educated and has returned to the village to work. Nearby towns and Alexandria offer additional opportunities for employment.

At the same time, in-migration is occurring throughout the areas. Although it is difficult to estimate the magnitude, there are several types: relatives of settlers; spouses of settlers and their descendents (males and females); government employees; laborers; tenant farmers; craftsmen and merchants. The latter category represents a spontaneous reaction to the failure to take into account the need to establish economically heterogeneous communities. Selection criteria for settlers focused entirely on agriculture and ignored needs for such basic services as barbers, tailors, carpenters, plumbers, merchants, and so on. Communities have rented shops and houses to in-migrants with needed skills. In one village the community has permitted craftsmen to build houses on the wide street next to the canal in exchange for a modest contribution to the mosque. Marriage into the communities reflects the importance of land ownership and housing in determining marriage

patterns. For example, since widows control their late husbands' land, they can readily remarry landless men from outside of the village who come and farm the land. Other widows farm their own land or rent it out on a share-cropping basis.

Of economic concern is the project's impact on Egyptian freshwater fisheries. Although the economic significance of fish production was not assessed by EARIS' planners, a project social scientist warned of the potential conflict with the traditional fishermen on Lake Mariut. Indeed, the fishermen repeatedly damaged works under construction until a negotiated settlement was reached which incorporated some of them into the project - as farmers. Today the remaining portion of Lake Mariut is the most productive of the Delta lakes, yielding 1,092 kilograms of fish per acre. Catches from Lake Mariut in recent years have exceeded Alexandria's marine catches by fourfold. Rising yields are attributable in part to the enrichment of Lake Mariut by the untreated and partially treated domestic and industrial discharges which flow into it through the project area from Alexandria.

### Environmental Impacts

EARIS was designed before the current concern with environmental issues. The Egyptian desert and coastal swamps were, rather, seen as challenges to overcome by technology and human effort and ingenuity. Without question in the case of the desert, the magnitude and the nature of the challenge were miscalculated. The technicians did not fully recognize what a fragile environment they were attempting to create nor the vulnerability of the agreements and institutions which were to guarantee the areas' lifeline of water from the Nile. The problems of water distribution and management in the Fayoum soon became the problems of the EARIS sites. The inability to insure a reliable water supply places the sustainability of a fragile, man-made agricultural environment in the desert in serious question. Fields which have gone out of production are subject to wind erosion. Proper installation of drains by EARIS has meant that soil salinity has generally not been a problem.

Lake Mariut, a marine lagoon, is the smallest of four shallow lakes which lie along the Mediterranean shore in the Egyptian delta. The lake's area has fluctuated considerably. In the Classical period it was larger, while in the eighteenth century it was dry. The present Lake Mariut was created in 1801 when the British cut the dykes which separated it from the sea as part of military maneuvers carried out against Napoleon. During this century, the lake's area has decreased from 20,000 hectares to approximately 8,000 ha. in 1960, due to land reclamation and, to a lesser extent, natural siltation. EARIS perhaps hastened natural geological processes already underway. The reduction of lake and swamp area has reduced the size of bird habitats, although other coastal lakes, notably Lake Idku, are more significant as habitats

for migratory birds. None of the species found in the Lake Mariut Area are listed as rare or endangered species.

### Impacts On Women

EARIS' farsighted plans to incorporate women in the development process and to train them in domestic and commercial skills were never implemented. In many respects their status has not been affected by the project. Today, women's commercial endeavors are largely confined to small scale, traditional activities: the sale of surplus agricultural poultry and dairy products. As elsewhere in rural Egypt, most of the small vendors in the local markets are women, especially widows. The team did note that some of the investments currently being made by agricultural cooperatives are in areas of traditional female economic activity: poultry production, marketing and the processing of dairy products. While capitalization will permit economic activity in these areas on a larger scale, it is unfortunate that women have not yet been involved in these ventures. Their success may have unintended adverse effects on women's economic statuses.

The project's impact on residence patterns has brought changes for women in particular. For many settlers the move to the new lands meant a significant change in residence pattern from extended to nuclear families. Settlers, particularly women, describe significant dislocations in accustomed work patterns. Small settler families were vulnerable to labor shortages caused by a young family age structure, illness and death. Because of this, women and girls appear to be a more important part of the family's pool of agricultural labor than on the old lands. While EARIS expected to compensate for labor shortages with agricultural mechanization, what appears to have happened is that smaller families resort to less labor-intensive lower value crops. A widow with six young children illustrates this. After her husband's death, she continued to farm but planted only rice, wheat and a few potatoes. She was unable to mobilize the labor to grow the higher value horticultural crops that the land had produced when both she and her husband had cultivated it.

A handful of the original settlers were women, some widows, some the younger wives of farmers too old to qualify as settlers. In addition because of inheritance, increased control over property by women has been an important unanticipated outcome of the project. The settlers received provisional title to their land and house, as noted above, and the status of farm operator. Having the latter, known as the hiyaza, entitles the settler to farm the land, to participate in the cooperative and to obtain agricultural inputs. Inheritance of property in Egypt follows Shari'a law, which, in general, divides property between sons and daughters in a ratio of 2 to 1. In contrast, the transfer of the hiyaza follows government regulations which stipulate that the property must not be divided and that one family member be designated as farm operator. In the vast majority of cases in the EARIS project areas, widows are being

given the hiyaza. In the Deshoudi Farm area of Abis, of the 343 hiyazas which have changed hands, 95 percent went to the settler's widow, only 5 percent to his son or another male. In practice, many of these women designate their sons to represent them in cooperative meetings and, often, to run the farm. Others farm their land themselves, rent it out on a variety of bases or hire labor. While this may be only a temporary phenomenon, it appears to be having an important impact on these widows who participate more actively in family and community decision-making and enjoy greater economic security. Gains which have not been realized for women through reforms of inheritance and personal status laws may have been achieved in more indirect ways.

### Impact on Health

Egypt in the 1950's saw the provision of adequate health services and sanitation as an integral part of its rural development efforts. Nationwide this was the period when the rural health system was expanded with the assistance of the United States, U.N.I.C.E.F. and other donors.

EARIS took three parallel approaches to insure a healthy, productive workforce. First, with the assistance of seconded Ministry of Health personnel, EARIS screened prospective settlers. Second, EARIS constructed six rural hospitals and 5 rural health units to provide health services on a continuing basis. Finally, with the provision of water and sanitary waste disposal and allowances for the sanitary housing of livestock, EARIS sought to improve village hygiene.

Today the hospital in Abis, Village 2 is fully operational and was renovated in 1978 with the assistance of current funding from A.I.D. The hospital has been selected as a rural demonstration hospital by the High Institute of Public Health, University of Alexandria. Under this program, a number of innovative programs have been introduced including oral rehydration therapy for infant diarrhea. The other hospitals visited are operated as health units and one, although completed and furnished, has never opened. The second floor wards of the rural hospital in Kom Osheim were converted to classrooms when the Egyptian Geological Survey took over the school building as a field station.

Health units visited were uniformly well staffed, each with at least one Ministry of Health physician, two or more nurses and midwives, as well as dentists, pharmacists, technicians or sanitarians. They offer a range of health services including vaccination and family planning. Although originally provided with water and electricity, today several health units suffer from a lack of basic utilities and, according to some settlers, basic drug supplies.

While the expansion of health services can be documented, it is difficult to establish post facto project impacts on the health status of settler families. The staffs of the health units described health problems which do not differ from elsewhere in rural Egypt: pediatric gastro-enteritis, bilharzia, respiratory infections, ascaris, amoebiasis and malaria (Abis). All agreed that gastro-enteritis is the leading cause of infant mortality.

The biggest disappointment in health, however, is the failure to significantly affect sanitary conditions in the village (Appendix H). EARIS provided protected water sources in all villages and household connections in many. Houses were built with toilets and stables were built outside villages to separate animals from homes. When, fearing for their valuable livestock, villagers did not use stables, house designs were modified to provide a separate area for livestock with its own entrance. As discussed in Appendix H, the water systems have deteriorated and the waste water systems dependent upon them are not operational. The availability of drinking water is uneven. In the best case, Abis 2, piped treated water is available and flush toilets operate in the houses. In the worst case, Qoota, the only available water for domestic purposes is that in the irrigation canal, water characterized by high concentrations of salts, pesticide residues and up-canal human and animal wastes. As the physician in Kom Osheim observed, "Where there is no water, there is no sanitation."

#### Impact on Population Growth

New lands were seen in the 1950's as a safety valve if not a solution to growing population pressures on the old lands. Settlers were, until 1970, chosen primarily from the most densely populated governorates to relieve their high densities. It was a natural impulse in a country with a rapidly growing population to support and such a small portion of the land under cultivation. Some of the more optimistic predictions were tempered with realism about the possible magnitude of the impact. In general, however, planners under-estimated population growth rates and over-estimated the land to be reclaimed. There are two questions to be answered with respect to population growth and land reclamation. First, was EARIS or, by extension, the sum total of land reclamation during that period able to keep apace with population growth? Second, what have been the demographic patterns and impacts within the project areas?

In general, the expansion of Egypt's cultivated land has failed to keep up with population growth (Figure 1). Land/man ratios have been falling consistently since the turn of the century a process now being accelerated by rapid encroachment of urban areas on agricultural lands. The acre which supported two persons in 1900 now must support five. The impact of EARIS and other projects is simply overwhelmed by population growth rates. Any individual project, such as EARIS, could have no more than a negligible effect on either land/man ratios or on the population size of the original

governorates of the settlers. EARIS resettled some 40,000 settlers. To keep apace with current population growth the team estimated that a comparable project would have to be created every sixteen days.

On the projects reclaimed land's themselves, population growth has significantly diluted the initial benefits in a single generation. As one settler who had moved from Menoufia to Abis because of land shortage noted, "I complained that 18 Kirats were not enough. My children will face the same thing and will need to apply (for new lands). History repeats itself."

Although total population figures for the sites were difficult to establish, two demographic surveys and health unit statistics suggest that population dynamics in the project area may differ from those on the old lands in several ways. Because the settler selection criteria excluded settlers over 45 (later changed to 50), the settler population was slightly younger than rural averages (Fig 3). In the early years, this meant that the ratio of individuals older than 65 and younger than 15 to the population of working age was low. As one might expect of a young population, fertility has been high and a generation later, the percentage of the population under 15 is still large (Figure 4).

However, a young age structure is not sufficient to explain the unusually high estimated birth rates in EARIS villages today. In the most detailed survey, that carried out by the Cairo Demographic Center in 1008 households in Abis 7 and 8, the crude birth rate is 52.8 per thousand, substantially higher than national estimates of 35.6 per thousand in rural Egypt in 1972. Relying on health unit statistics, the evaluation team estimated a crude birth rate in Abis, Village 10 of 49 per thousand and a rate of 60 per thousand in Kom Osheim. Of the villages which were investigated, only Abis 2 had a relatively low crude birth rate, an estimated 40 per thousand.

Two other indicators, individual fertility and contraceptive usage were consistent with these high fertility rates. In a Cairo Demographic Center survey, women in Abis 7 and 8 had an average of 7.14 children. The Khattabs' survey of the three sites revealed an average of 6.5 to 6.8 children for the 150 women who were interviewed. This survey also revealed a pattern of low contraceptive usage. Of the 50 women interviewed in each of the three sites, 90 percent in both Qoota and Kom Osheim had never used contraceptives, 76 percent in Abis. The team's observations were consistent with these findings. In the health units visited, the number of contraceptives reportedly distributed was consistently low.

One needs to interpret these findings with some caution. The data are not good enough to control for such factors as the effect of age structure or of different origins of the settlers. Further, one can only speculate how such socio-economic factors as dislocations in accustomed work patterns and labor shortages and improved health status might have been translated into high

fertility. One can also speculate more optimistically, that lower fertility in Abis 2 and higher use of contraceptives there indicates that improved economic conditions and greater availability of family planning are having an effect.

However, overall, the data do suggest a pattern of fertility significantly higher than in rural Egypt as a whole, a fact which needs to be better understood. Furthermore, one cannot help but observe that the value of children on new lands is significant. In the failing sites in the Fayoum, children's migration is key to families' financial survival. In Abis labor-intensive vegetable crops have led to prosperity and children contribute importantly to the family's economic well-being. One can only agree with a settler and community leader in Abis who observed to the team that, "Family planning should have been introduced very early."

### Institutional Impact

EARIS fostered institutional development on both the national and local levels. On the national level, there was EARIS itself. Established in 1953, EARIS was a semi-autonomous, independently-funded organization mandated to carry out a reclamation and resettlement project in Beheira and Fayoum. EARIS was charged with the reclamation of lake bottom and desert lands, the selection and resettlement of settlers in new villages and the assistance of the settlers through the time that the land could support them. It contracted with ministries to provide services: with the Ministry of Public Works to construct the irrigation system; with Housing to construct new villages; with Health to screen settlers.

EARIS, according to accounts, was a large but highly effective and efficient administration. At the height of activity, EARIS had more than 1600 employees at its headquarters in Cairo and at field stations in the Fayoum and Abis. Because it had its own funds, EARIS enjoyed considerable independence from bureaucratic procedures. It operated "like a private corporation", according to a former administrator. It could attract hand-picked employees from the public and private sectors offering incentives up to 100 percent above government salaries, salaries which were already more in line with the cost of living than current government wages.

The problems which confront these lands today trace their origin to the period of transition from EARIS. From 1957 EARIS was absorbed in a series of steps into regular administrative entities\*. In 1963, joint-funding officially ended and in 1964, EARIS, as an organization, was disbanded. In 1966, the Ministry for

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\* General Organization for Development and Rehabilitation in Behera and Fayoum, through 1957; Permanent Organization for Land Reclamation, 1957-61; General Authority for the Utilization and Development of Reclaimed Land, 1961-66.

Agrarian Reform and Land Reclamation divided into two separate ministries with responsibility for old and new lands respectively. The Ministry of Agrarian Reform took over the administration of Main Abis, effectively incorporating it into the old lands. In contrast, Deshoudi Farm, Abis Extension and the two sites in the Fayoum, continued to be administered under various arrangements as new lands.

The Main Abis area is an example of a successful transition. Although the Main Abis area faced difficulties in early years, strong local leadership and a strong cooperative organization emerged. Its fledgling agricultural cooperatives merged into a single organization in 1968 integrated into the national agricultural system. Today, this organization includes ten cooperatives and is a substantial local leader in agricultural and agro-industrial investments. It has been an effective lobby and agent for community development. By and large, the irrigation system has been maintained and occasional summer shortages of water appear to reflect overall increases in demand rather than a substantial lack of administrative control. The newer villages in the Main Abis area enjoy lower levels of services and lower productivity, but they are incorporated into area planning and anticipate greater prosperity. In addition, Main Abis, alone among the EARIS cooperatives, is seriously attempting to generate jobs, primarily in agro-industries, for the sons of settlers.

One can generalize that the sites which remain under the Ministry of Land Reclamation have encountered substantial difficulties. The failure to incorporate them administratively into old lands appears, at least in part, to be responsible for their inability to deal effectively with the Ministry of Irrigation. Their cooperative system, under the Ministry of Land Reclamation, seems to be ineffective in representing their interests to the national government while retaining considerable control over the farmers and possibly stifling individual enterprise and initiative. The orphaning of new lands once reclaimed is a problem which has been recognized by the GOE. While the evaluation team was in-country, a decree was issued that all new lands would be turned over to the Ministry of Agriculture five years after reclamation. Conceptually, there appears to be a distinction now being made between reclamation and cultivation which may, if the new decree is implemented, be reflected in more effective production on older "new lands".

While the institution EARIS did not endure, it should be noted that its impact did. Most of the employees were taken over by subsequent administrations (Appendix G). The technical training offered by EARIS has also had a lasting impact. Of the 42 participants trainees who could be located in 1981, one fifth are with the Ministry of Land Reclamation. Almost all those still living are working in agriculture or civil engineering. All but two are in Egypt.

### Impact on Rural Infrastructure

While EARIS succeeded in placing the necessary inputs in the hands of the farmer and in providing above average shelter for rural families, it was frustrated in its aim to provide higher levels of public service and rural infrastructure. Throughout the project areas, the infrastructure built by EARIS of water, sanitation, roads, electricity, schools and clinics has deteriorated (Appendix C and H). In no area has the level of infrastructure constructed been maintained; electricity lines are down, roads are rough, water supplies are inadequate or systems have broken down altogether.

The deterioration of domestic water supplies exemplifies the general decline of infrastructure. All seven EARIS central villages observed in the field, and most satellite villages constructed contemporaneously, were provided with piped, treated, drinking water to each household. Each house was provided with one interior tap, generally a conventional brass faucet, located in the same small room as the latrine. Water from this tap was and is used for drinking, cooking, washing utensils, laundering, and perianal cleansing following defecation. The sources of this water were large, existing provincial water treatment plants. Where necessary EARIS constructed or extended transmission mains to project villages.

Today all EARIS villages have inadequate water supply and sanitation, ranging from moderate problems in some Delta villages to total lack of safe drinking water in some of the Fayoum villages during much of the year. Poor maintenance, local and regional population growth, increased industrialization, and increased leakage in transmission mains all contribute to an almost total breakdown of regular water supply. The Delta villages have water supplies characterized by low pressures (especially during daytime hours), frequent service interruptions, and suspect water quality. The Fayoum villages have problems similar in kind but more severe in degree. In the Fayoum, during much of the year much of the population is dependent on water taken directly from canals - often from canals several hours walk removed from the villages. These supplies undoubtedly transmit numerous diseases, particularly pediatric diarrhea, and promote transmission of schistosomiasis (bilharzia).

At Qoota, at the very end of the transmission lines mothers dig seep holes in the bottom of irrigation canals in their search for water for their families during the dry season. Kom Osheim is also at the end of the transmission main. A military camp intercepts water just short of the village and a government geological station's plans to install suction pumps for its own use will further lower pressure in the village to levels which will eliminate use of the system during most of the day.

#### IV. Impacts Analysis

EARIS launched what remains Egypt's most successful land reclamation project. It was and still is widely cited as the highpoint in American foreign assistance to Egypt during the 1950's and 1960's. A number of factors can be identified that contributed to the success of EARIS as a project which achieved virtually all of its physical targets and captured the support and interest of the Egyptian government and Egyptians at many levels.

First, the aims of EARIS coincided with, even epitomized Egyptian political and developmental goals in the post-revolutionary period. It was a time of experimentation, dedicated to the uplifting of the Egyptian peasant through social and economic reforms. Land reclamation paralleled the major land reform legislation of 1952 efforts as means to broaden the base in social as well as physical terms of Egyptian agriculture. The extension of rural infrastructure and the construction of new villages were bold experiments to raise the physical quality of life of the peasant. The expansion of educational opportunities and training were intended to create a new informed and productive citizenry. EARIS objectives were consistent with American development aims, but the driving force behind them was Egyptian.

Full Egyptian participation in planning and implementation followed from this commitment. Early planning was accomplished by high level inter-ministerial task forces with American technical participation. Representatives from various ministries were seconded to EARIS to implement the project. While the level of Egyptian participation may have blunted the impact of American technical assistance, it unquestionably facilitated the execution, coordination and integration of project activities. Egyptians interviewed explicitly contrasted EARIS' approach to technical assistance with that of the contemporary AID program in Egypt. The use of direct hire technical experts, in their view, provided greater continuity, closer cooperation, and less tension over salary issues than is the current case.

EARIS was established as an autonomous independently funded organization reporting at the highest levels of government to the National Production Council. EARIS, was thus set apart from normal bureaucratic channels which might have delayed planning, procurement and implementation. Red tape, by reports, was minimized. Fiscal independence, made possible by American funding, translated into greater flexibility between budget line items and in operating procedures such as procurement. A former administrator recalled that once, faced with a beetle infestation on the first cotton crop in Abis, he bought the only available spray nozzle - on the black market - and saved the crop. Had he been obliged to follow procedures this crucial first crop would have been lost.

While training Egyptian technicians in land reclamation techniques was not an explicit aim of EARIS, it was certainly a direct consequence of implementing the project. The effectiveness of that training, practical, hands-on and relevant, contributed substantially to the project's success and its lasting impact on land reclamation methods in Egypt (Appendix G). In addition, the impact of the participant training program has endured. The bulk of those trained remained in government service, a fifth in land reclamation.

Ultimately, however, the success of the model has depended upon the responsiveness of the fellahen. As the project began, the fellah was seen as a constraint, conservative, unwilling to move from the old lands or to adopt new farming techniques. The farmers can be credited with establishing cultivation, the step which has eluded other land reclamation schemes in Egypt. Even within the project area, one can compare the accomplishments of the small farmer with those of college graduates, given 20 to 30 feddans and with state farms and see the markedly superior productivity of the small owner-operated farms.

With the substantial benefit of hindsight one can also identify the factors which were underestimated at the time and which have prevented the full realization of EARIS' aims. First, water, not land or soil characteristics, has proved to be the most critical physical constraint in the development of new lands. Adequate surveys carried out before sites were selected insured good soils. The criticality of water, however, and the fragility of the institutional arrangements meant to assure it were not adequately addressed in project design. Additional water was allocated to the main canal to irrigate the expanded acreage and the distribution canals were lined to minimize transmission losses. However, increased upstream demand due to spontaneous private land reclamation, new legal and illegal irrigation outlets, and insufficient maintenance of canals translate into inadequate water at the end of the line.

The transition from the EARIS administration to dependence upon line ministries, for staff, operations and maintenance, was accompanied by an almost precipitous deterioration of services in addition to irrigation water. The independence which facilitated the accomplishment of the project's initial targets was later to impede incorporation into the national system. In part, the decline in services can be attributed to increasing demand throughout rural Egypt and the inability of the ministries, with limited resources, to keep up with the demands of a rapidly growing population. However, EARIS did not plan adequately for a transition period when the fledgeling communities would still need support. The assumption that small villages with nascent leadership and organization would be able to attract or provide continued services and operating budgets for a level of infrastructure considerably above national

averages seems in retrospect, naive. It proved unwise to ignore the social, political and economic realities which pattern the regular distribution of resources and services in Egypt, favoring urban areas over the rural, villages over hamlets and the fifty acre owner over the holder of five. Despite active community participation and pressure on provincial government to perform, only in Abis, and there only in recent years, have community efforts been effective. While the project's interest was to create egalitarian communities, it also created ones which were small, resource-poor and relatively impotent vis-a-vis the bureaucracy.

These institutional questions explain the differences between the state of the sites. Despite impressive effects in the Fayoum, EARIS was unable to develop an institutional base capable of sustaining viable new communities in the fragile environments at the desert margin. The new communities lacked a whole range of traditional and governmental institutions found in the old lands: courts, cooperatives, extended families, patron-client ties, traditional leaders, and in more recent years, village councils. It was the totality of this social and economic fabric which EARIS could not duplicate.

What appears to be happening in the Fayoum is that today, people are reasserting older traditional ties. Families in Qoota are returning to their villages of origin. In Kom Osheim, where most of the settlers were from nearby towns, families are relying on the ties to their old villages by marriage and economic alliances. Traditional agricultural institutions are emerging, sharecropping, the use of farm labor, usufruct, share ownership of livestock and the use of middlemen to obtain agricultural inputs and credit and market outputs.

In contrast, several factors appear to have contributed to Abis' success. First, the site is not as dependent upon a fragile life line of water and thus is not as vulnerable to the failure of the institutions which assure it. Secondly, proximity to Alexandria has provided markets for high value vegetable, dairy and poultry products but, as importantly, fostered economic diversification and offered access to additional employment, education and services. This has not occurred in the Fayoum where the project sites were constructed at a considerable distance from such supports. Integrated rural development in the desert sites has meant the integration and imposition of services on a narrow and fragile agricultural base. In Abis, a much more vital economy has emerged. In addition, EARIS' efforts to develop community leadership and organization took hold in Abis although in ways that were not anticipated. After twenty years, an institutional base has developed which mixes governmental, private and traditional elements. Abis is also considerably larger than the other two sites with a total original population of over 35,000. A population of this size can support greater economic and social diversity, take greater risks and sustain itself better through reverses than

smaller communities such as Qoota and Kom Osheim. Finally, Abis farmers were exempted from the requirement to grow cotton and were thus able to exercise greater individual choice and flexibility in productive strategies.

There can be little question that the process of deterioration of support on both the national and provincial level was hastened by the changing political scene. As American fortunes in Egypt declined in the wake of increasing Soviet influence, so did those projects most closely identified with American assistance. But more importantly, the political shift was responsible for the failure of EARIS to achieve its wider goal, to serve as a model for wide scale land reclamation and rural development. The model of small-scale owner-operated farms was never divorced from its political context and overtones. Instead, Egypt embarked on a program of state farm reclamation schemes. Even some of the land reclaimed in the closing years of EARIS was not distributed to settlers but used to create state farms.

Despite these shortcomings, EARIS launched what remains Egypt's most successful land reclamation project. Its major accomplishment as a model was to place the necessary inputs - land, water and credit - in the hands of the Egyptian farmer. It demonstrated the possibility of small scale agriculture on reclaimed land, the feasibility of bringing both lake bottom and desert land into production and the responsiveness and adaptability of the Egyptian peasant to new social and economic situations.

#### LESSONS LEARNED

1. Area development projects which require major commitments of host government resources, human and financial, should only be attempted when they are in line with host government priorities policies and objectives.

EARIS succeeded as a project because it coincided with, even epitomized, Egypt's top political and developmental goals. EARIS' objectives were consistent with American developmental aims, but the driving force behind them was Egyptian. Full Egyptian participation in planning and implementation followed from this commitment.

While less ambitious projects may be planned as demonstration and pilot projects, large area development schemes require major host government commitment of manpower and resources and are unlikely to succeed unless they reflect government priorities and policies.

2. The establishment of a temporary authority facilitates project administration and short term efficiency. However, the long-term necessity of relying on regular administrative

mechanisms and channels and the need to foster effective local institutions and leadership, requires careful planning of the transitional stage.

### Discussion

Like many area development schemes administered by a specially created central or regional authority, EARIS foundered during the period of transition to normal administrative channels. Communities not only lost the special administrative status they had enjoyed but were not able to enjoy even the routine status and benefits of old lands communities. They had not developed many of the basic formal and informal institutions of the old lands: village councils, courts, patron-client ties, and cooperatives.

In Main Abis, the concerted efforts to develop local leadership resulted in the formation of an elite group of farmers who have been a dynamic source of community leadership. As a result, this community has organized its cooperatives, developed links to local and national administrative units and been able to mobilize its own resources and pressure government entities to obtain services. Where effective community leadership did not emerge, the project sites have been unable to overcome the problems of administrative transition.

3. Problems of water management have proved to be the single greatest technical constraint to agricultural productivity and financial viability.

Inadequate irrigation water in the Fayoum and poor drainage in the Abis Extension sites have posed the most serious limits to the impact of the project. In the case of lake bottom lands, drainage problems and resulting resalinisation have reduced productivity. On the desert margin, basic supplies at the end of the transmission lines are disasterously insufficient. EARIS sites share problems noted in other recent assessments of irrigation projects worldwide which have noted both insufficient provision for operations and maintenance of irrigation systems and poor implementation of irrigation projects.

Two factors appear to be largely responsible for EARIS' water management problems. Initial technical feasibility assessments focused almost entirely on the suitability of soils. Increased water allocations were negotiated, however there was no discussion of institutional requirements and potential difficulties of translating de jure water allocations at the mouth of the canal into de facto supplies at the terminals of the distribution system. The failure of delivery system maintenance and competition for this scarce resource are responsible for undermining the project in the two Fayoum sites.

4. Unaddressed issues of maintenance and recurrent costs of infrastructure refuse to be swept under the rug and rapidly undermine investments in infrastructure.

#### Discussion

EARIS in an effort to create model villages to attract settlers and to reform rural life, built roads, electricity, water and sewage, clinics, hospitals and schools at a level which was substantially higher than the rest of rural Egypt. Today, virtually all of the infrastructure built is in-operative or has deteriorated substantially. All three of the sites have suffered interruption of and declines in service delivery from the decline of roads, educational and health facilities to absolute interruptions of electricity, adequate irrigation and potable water. It appears obvious that the level of rural infrastructure associated with an area development project should be consistent with the local ability to finance its operation and maintenance. However, in the case of EARIS, there have been neither sufficient funds nor personnel to maintain these services after the end of the project. In fact, in the later years of the project even the EARIS administration found the recurrent costs burdensome and sought ways to transfer responsibility for operation and maintenance to line ministries. The planners' assumption that the development of local government would be sufficient to insure the support and continuation of services proved to be ill-founded.

5. Area development and land reclamation cannot be considered solutions to national demographic pressures. To sustain benefit over time projects should incorporate long term planning for population growth as well as provide actively for family planning.

#### Discussion

In the case of EARIS, on-site population growth has already diluted many of the project's benefits. Land to man ratios which the project was designed to improve are already declining. Inevitably, land holdings and their yields will be fragmented. Housing is becoming crowded. The second generation can only be partially employed on the land. Only in the most successful village of Abis have agro-industries emerged which absorb some of the second generation. But even in the most successful village, less than half of the youths interviewed see a future for themselves in the village.

On the national level, the total of all land reclamation efforts has had a negligible effect on aggregate food production or population density and distribution. The population which settled EARIS was too small to have had an effect on the sending governorates. But the great factor in limiting the impact of land reclamation has been the unabated rate of population growth. The

evidence that fertility rates in the project site are substantially higher than in rural Egypt as a whole goes against what has been previously observed and requires further study and interpretation.

6. Area development on a narrow agricultural base is vulnerable to crop failures, fluctuations in marketing and availability of key agricultural inputs. The design of area development projects needs to incorporate ways to foster economic diversity. At the same time communities should be planned of a sufficient size to support economic diversity.

EARIS project sites were conceived of as agricultural communities. The integrated aspect of EARIS referred more to the delivery of services than to the development of an integrated economic base. Settler selection criteria, housing and village plans and other planning were based assumed agricultural homogeneity. The more successful sites have by now, twenty years later, developed the economic diversity which characterizes communities; butchers, bankers, tailors, mechanics and traders. Methods might have been developed to encourage greater heterogeneity in the early years, including:

- Settler selection criteria considering household skills other than farming;
- Construction of commercial space in new communities;
- Location of resettlement schemes with ready access to existing services;
- Development of income streams in the community based on non-farm activities, and
- Community size sufficient to support economic diversity.

7. Control over key agricultural inputs and farm level decisions should be in the hands of the farmer. Means need to be developed within the project to insure this over the long term.

### Discussion

Initially, EARIS planned to make key inputs - land, water, credit and agricultural inputs - available to the small Egyptian farmer through the cooperative system. In Abis, this aim has been realized in large part and, together with the Abis farmer's exemption from the requirement to grow cotton, with its controlled price and relative freedom to decide on production strategies, has meant that productivity and farmer incomes have been relatively high.

In contrast in the desert sites, farmers have gradually lost control over key inputs, first water, then, as a result of crop failure, credit for other agricultural inputs. Because many farmers are in arrears, even their status with respect to the land is in question. Furthermore, these farmers have a limited range of

cropping choices and are generally unable to grow or market effectively high return crops. Artificially low agricultural prices and controlled marketing are further disincentives to farm under conditions which are already adverse.

**APPENDIX A**

**Photographs: 1952-1981  
(From the EARIS Project Archives)**

**Pamela Johnson and Graham Kerr**

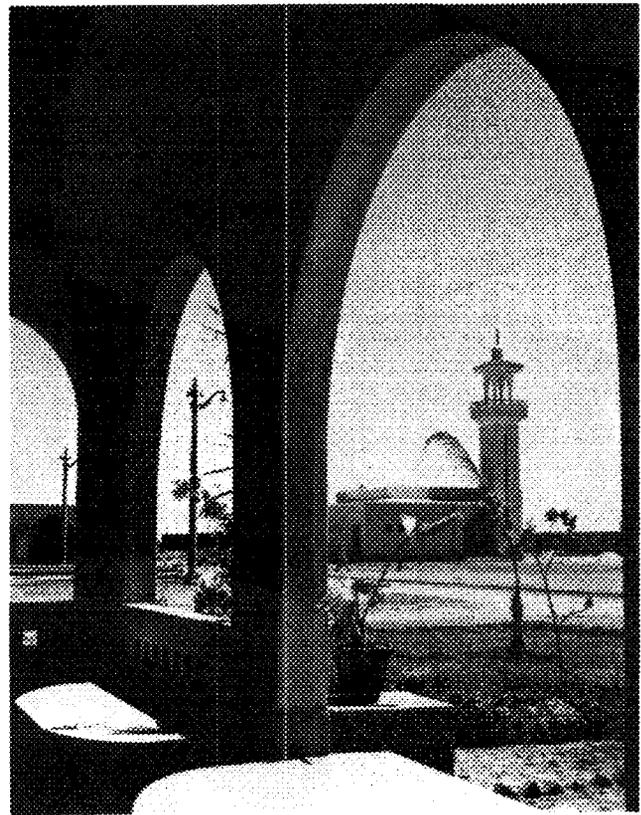
# EARIS:

# 1952 – 1981



*The Egyptian-American Rural Improvement Service Project (EARIS) resettled landless farmers from Egypt's overcrowded rural provinces on reclaimed land. The project was part of a series of Egyptian efforts designed to*

*transform the economy and physical environment of rural Egypt. National attention was focused on the settlers who travelled from their natal villages by train and truck to new villages built by the joint Egyptian-American project.*

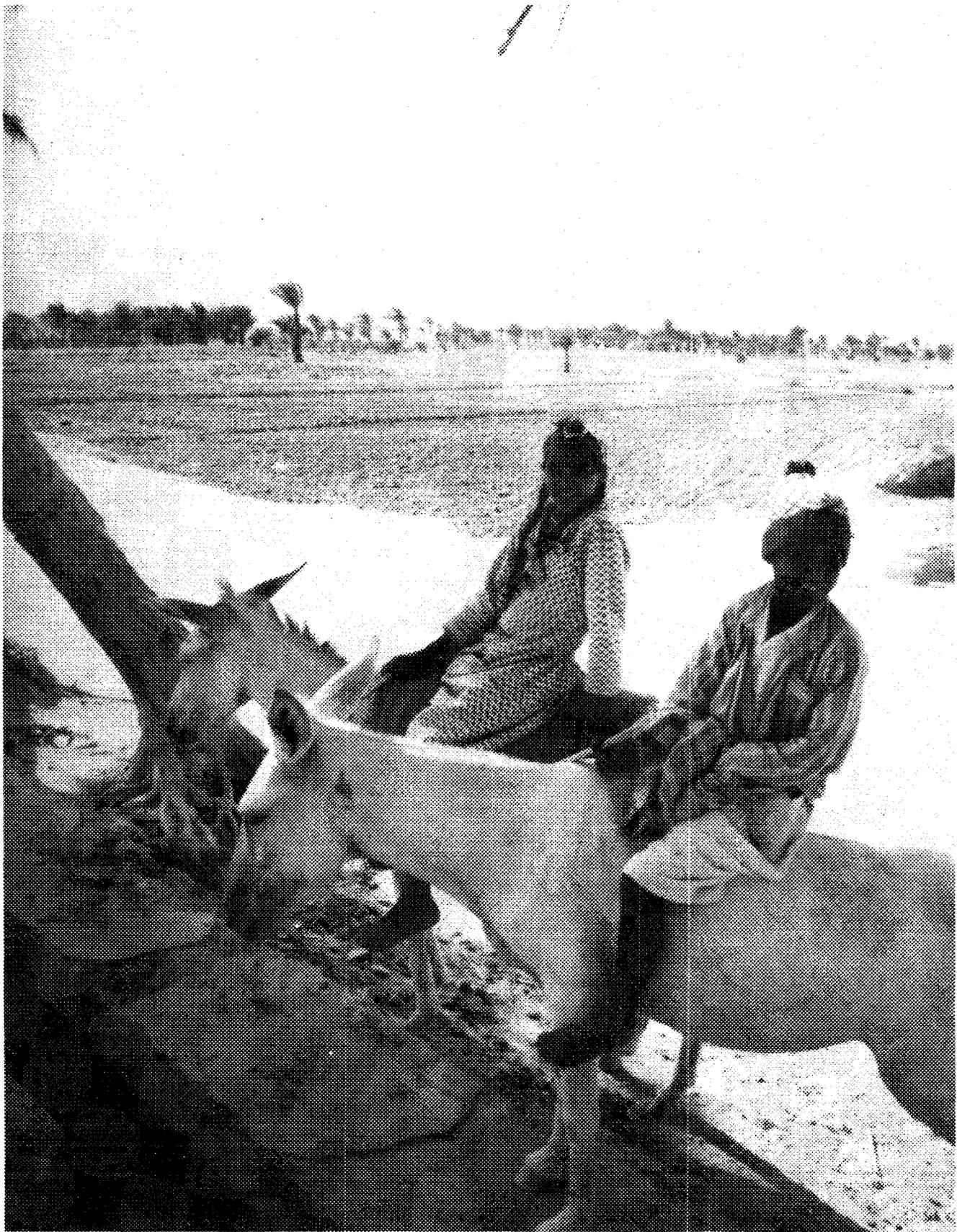


**1950s:**

*Families from "Old Lands" villages (above left) settled newly constructed model villages with water supplies, electricity, a mosque, a school, and a health center or rural hospital, all built by EARIS (above right). The*

*villagers left mud brick homes with traditional ovens and water storage jars (below left) for cement block homes with piped water and more efficient ovens (below right).*





**1981:**

*Today the next generation is farming the land and the grandchildren of the original settlers are in school and at*

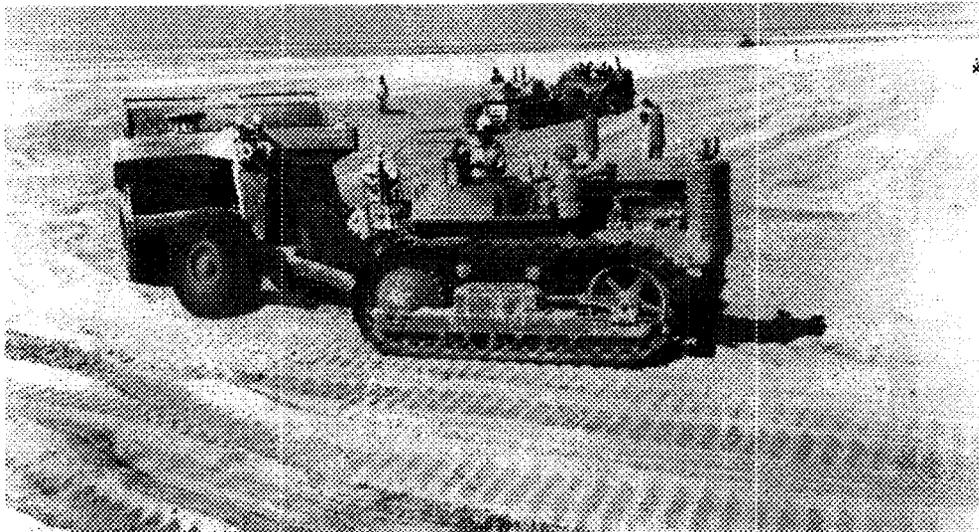
*work. This evaluation examines the impact of the project after nearly thirty years.*



*EARIS reclaimed 37,100 acres of lake bottom and desert lands. At Abis, 30,000 acres were reclaimed from Lake Mariut, a coastal lake exploited by nomadic fishermen (above). The lake land was drained and an extensive*

*network of canals and drains constructed to enable year round agriculture. American and Egyptian agricultural experts directed experimental plantings of rice and cotton (below) which gave yields well above average.*





*Two separate desert sites totaling 7,100 acres were developed on the fringes of Fayoum Province, at Qoota, (above), and Kom Osheim. The soils were leveled, leached and irrigated using machinery donated by the United States. EARIS extended transmission canals to transport*

*irrigation water from the Nile and developed a network of secondary canals and drains (bottom) Today, the desert lands remain fertile. Farmers at Qoota, (below), irrigate fields to produce crops including rice, onions and fodder.*





*Abis, twelve kilometers from Alexandria, has been the most successful site. Estimated net agricultural revenues have risen from LE 185 in 1962 to LE 1300-2200 per household. Grain, fodder and high*

*value vegetable crops give yields comparable to or greater than on the Old Lands. Individuals and cooperatives have invested in marketing and processing, adding value to agricultural produce.*



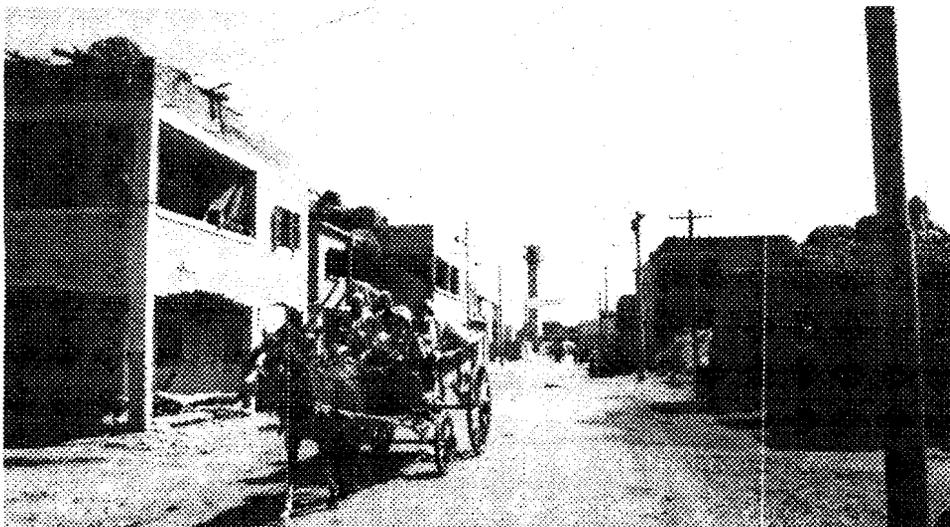
*Average livestock holdings have also grown from one to four large animals per household. Agricultural coopera-*

*tives process milk and cheese and retail agricultural products through outlets in Alexandria.*



*After the end of the project, animal power replaced mechanization for transport and farm operations. Today, with rising revenues and incomes spurring investment, individually and cooperatively owned vehicles and*

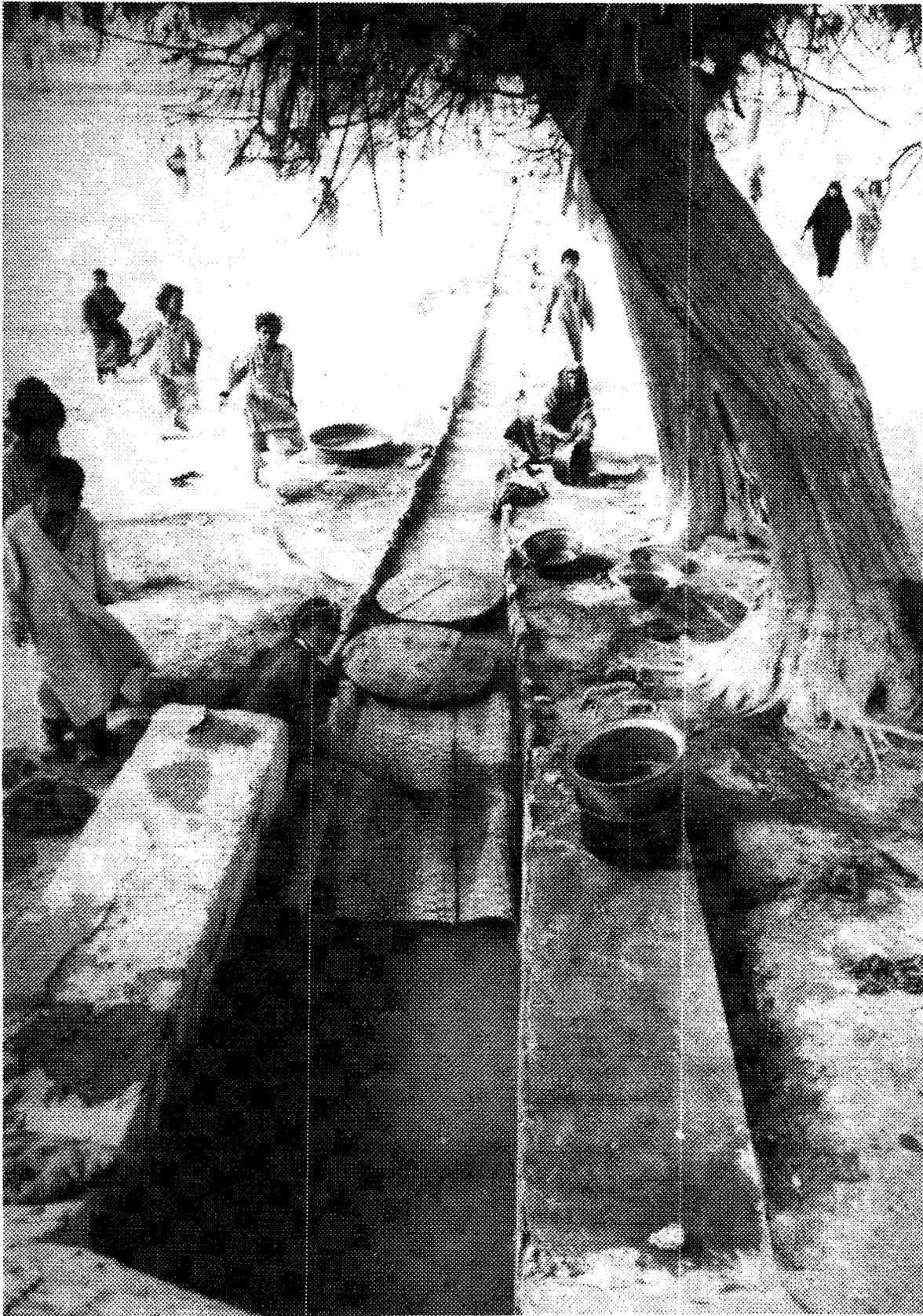
*mechanized farm equipment are returning (above). The village of Abis 2, (below), is the thriving site of more than fifty shops, an area hospital and food processing operations.*





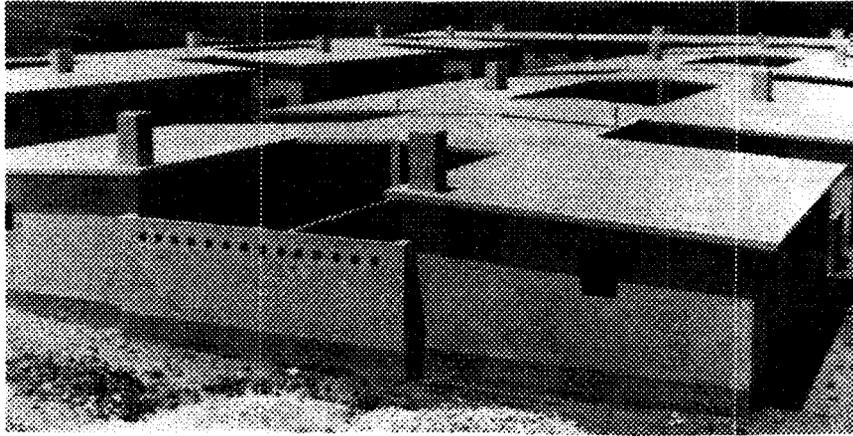
*The lack of water has proved to be the single largest constraint to agricultural productivity and sustained growth of desert sites. In Qoota, (above), supplies are inadequate as up-canal*

*farmers use water allocated to the desert site. Land reclaimed and once cultivated lies barren and some settlers, unable to sustain a living, have left.*



*At the time of EARIS drinking water was piped from a provincial treatment plant and delivered via household connections. Today in Qoota women must rely on sporadic supplies of water in the*

*irrigation canal for drinking, washing and other household uses. The bathing of animals, run-off of fertilizer and agricultural pesticides and human wastes up-canal all contribute to poor water quality.*



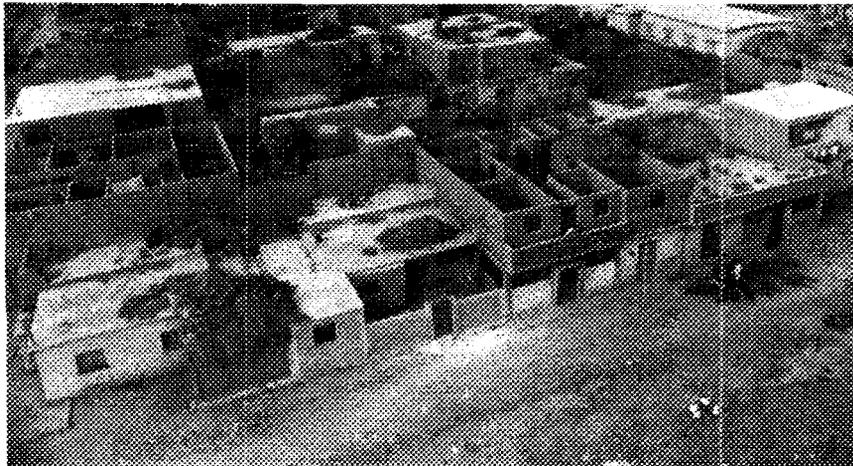
*EARIS built nearly identical concrete block houses with courtyards and separate spaces for animals (above). Altogether the project constructed*

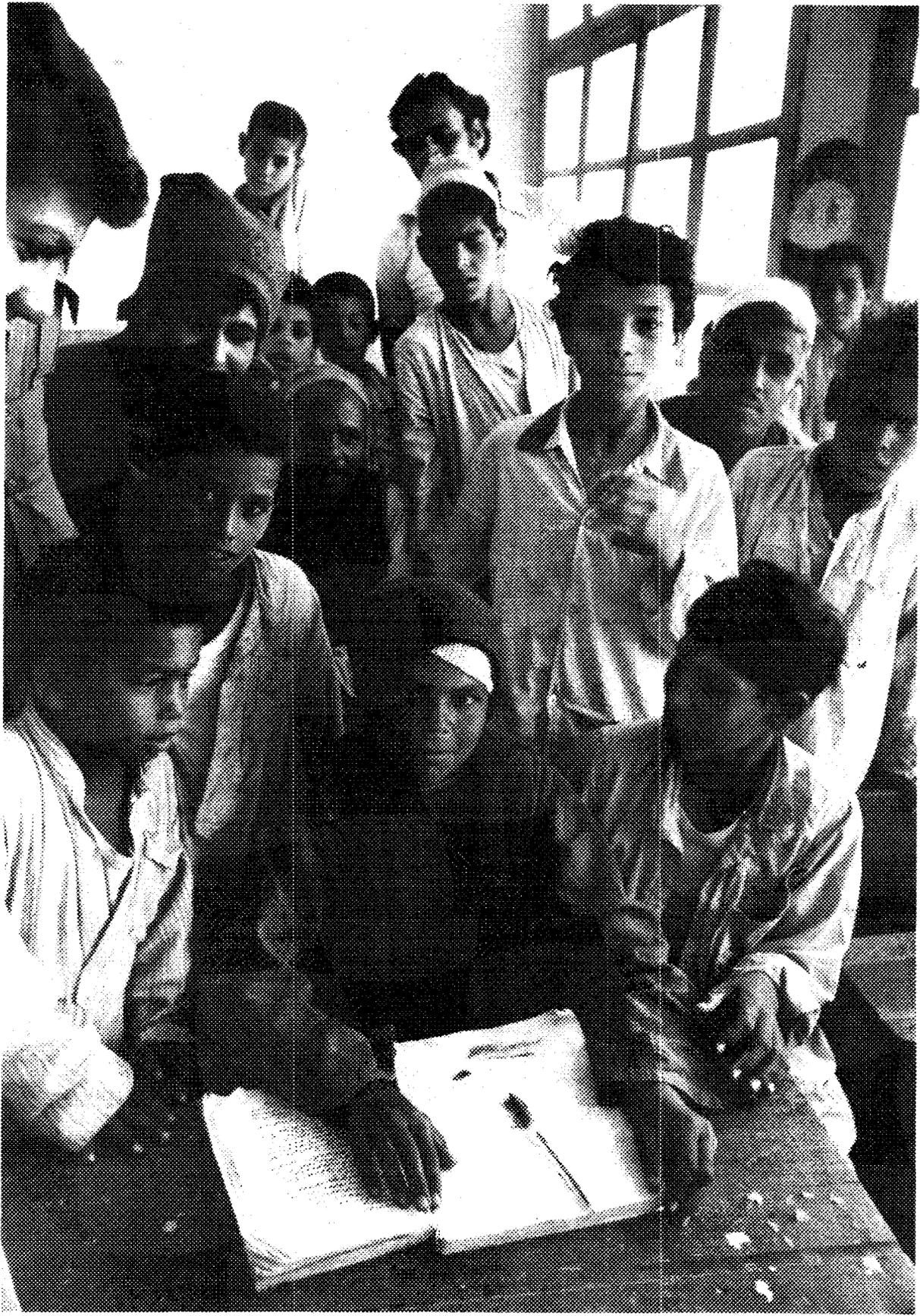
*13 complete villages and more than 60 hamlets, housing 7,600 settler families.*



*Spurred by population growth and rising incomes, families have added second stories, filled in courtyards and otherwise transformed the original houses using more traditional building techniques*

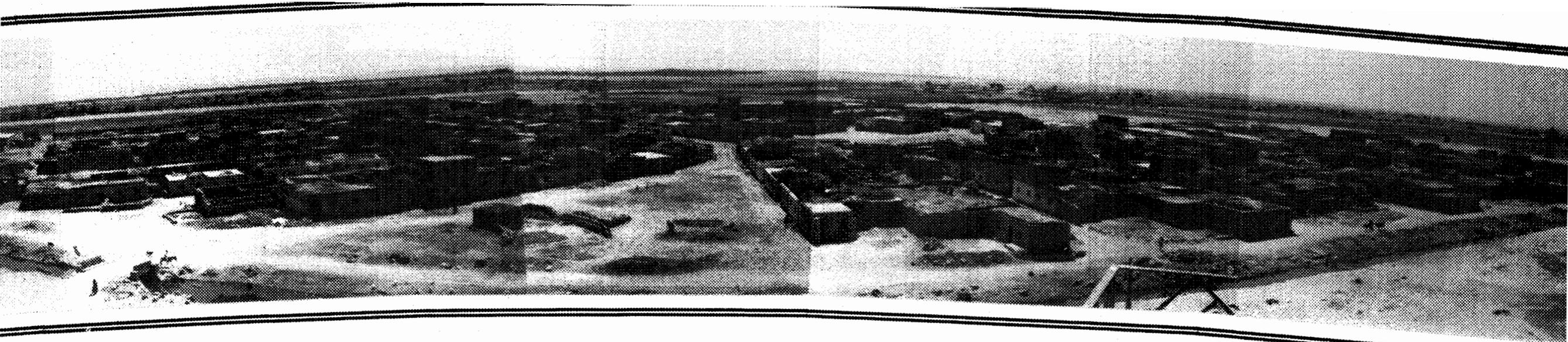
*(above). As in most prosperous agricultural villages in Egypt, the roofs of the houses in Abis are stacked with fodder and fuel (below).*





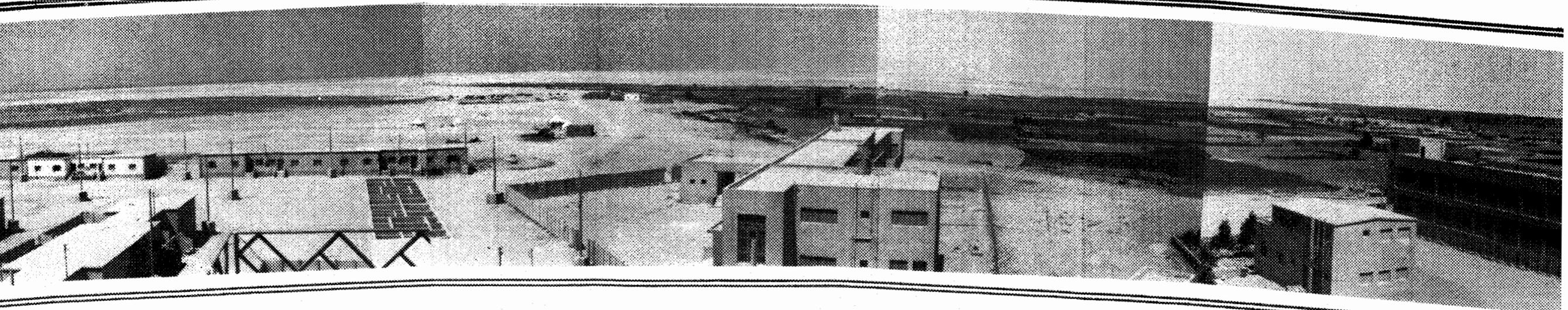
*EARIS also built schools and literacy has increased. While only a fifth of the original household heads were literate, today 53 percent of the younger*

*generation sampled can read and write. A few have gone on to secondary school and even university.*



*EARIS launched what remains Egypt's most successful land reclamation project. Although it did not develop the institutions necessary to sustain development, EARIS placed the necessary inputs - land, water and credit - in the hands of the Egyptian farmer. It demonstrated the possibility of small scale agriculture on reclaimed land, the feasibility of*

*bringing both lake bottom and desert land into production and the responsiveness and adaptability of the Egyptian peasant to new social and economic situations. The villages which EARIS constructed such as Kom Osheim, this spread, raised the quality of life for rural families.*



**APPENDIX B**

**Logical Framework**

APPENDIX B

Reconstructed Logical Framework

Egyptian American Rural Improvement Services  
(EARIS)

Goal:

"Improvement of social and economic conditions throughout all Egypt, by carrying out a broad demonstrational program of development which attacks, through self help, community participation and direct assistance, the basic problems of rural life for the people in the Provinces of Buheira and Kayoum." Program Agreement March 19, 1953.

<u>PURPOSES</u>	<u>OUTPUTS</u>	<u>INPUTS</u>	<u>VERIFIABLE INDICATORS</u>	<u>IMPORTANT ASSUMPTIONS*</u>
Reclaim & Develop Agricultural Land	1) Soil Survey & Land classification 2) Construction of adequate drainage 3) Construction of adequate irrigation system 4) Clear, level, wash, leach and crop 20,000 feddans in Abis, 13,000 in Fayoum			
Development Agricul- tural Potential of Reclaimed Land	1) Maximize yields on reclaimed lands 2) Demonstrate improved cultivation techniques on old lands in Beheira and Fayoum.		1) Improved crop and soil management 2) Efficient use of irrigation and drainage waters. 3) Improved Livestock protection 4) Control of insects and diseases.	1) A well coordinated national extension service. 2) A program of agricultural research as basis of sound advice to <u>tellaheen</u> 3) Coordination of related activities

<u>PURPOSES</u>	<u>OUTPUTS</u>	<u>INPUTS</u>	<u>VERIFIABLE INDICATORS</u>	<u>IMPORTANT ASSUMPTIONS*</u>
Develop Model planned	1) Regional, village & house plans 2) Construct 10-12 model villages		Plans developed  Village Construction completed electrification	
Develop New Communities based on principles of self help and participation	1) Select landless farm families for resettlement 2) Prepare settlers for resettlement 3) Develop community organization emphasizing a) village leadership, b) village councils, c) community centers d) recreation e) improved home life and community activities.			Coordination of Ministry of Social Affairs Fellah Dept. with Ministries of Agriculture, Education, Health and Public Works
Improve levels of public health through environmental sanitation, clinical services, training & health education.	1) Analysis of major health problems 2) Provide essential community environmental services 3) Establish health criteria and participate in settler selection 4) Develop health and medical services 5) Strengthen rural health centers and estimate province-wide health and sanitation approach.		1) Operating potable water and sanitary waste system 2) Functioning health and medical services	



**APPENDIX C**

**EARIS: Land Reclaimed, settlers by site**

TABLE I A: SUMMARY PROFILE OF EARIS SETTLERS AND INFRASTRUCTURE: VILLAGES AND ESTIMATED POPULATION

VILLAGES	SATELLITE HAMLETS	NO. OF SETTLER FAMILIES	ORIGIN OF SETTLERS	CURRENT EST. POPULATION
<u>ABIS</u>				
Village I	1		Kafr el Dawar, Buheira, Menoufia, others	5,000
Village II				7,800
Village III	12	2,857		8,000
Village IV	13			7,500
Village X	2			5,400
Village V	6			
Village VI	12	1,674	local fishermen	12,000
Village VII	5+1 Settler- built		Buheira, Menoufia, Suez, and laborers	5,000
Village VIII	8	1,684		11,000
<b>TOTAL, ABIS</b>	<b>60</b>	<b>6,215</b>		<b>61,700</b>
<u>QOOTA, FAYOUM</u>				
Village I	2			2,300
Village II	2		Beni Suef, Bedouin	2,400
<b>TOTAL, QOOTA</b>		<b>975</b>		<b>4,700</b>
<u>KOM OSHEIM, FAYOUM</u>				
Village I			Fayoum, Laborers	4,500
[Village II]				
Village III				500
<b>TOTAL, KOM OSHEIM</b>		<b>705</b>		<b>5,000</b>
<b>OVERALL TOTAL</b>				
<b>13 Villages</b>	<b>64</b>	<b>7,695</b>		<b>71,400</b>

TABLE I B: SUMMARY PROFILE OF SETTLERS AND INFRASTRUCTURE: VILLAGE INFRASTRUCTURE

VILLAGES	HOUSES CONSTRUCT.	HEALTH FACILITIES	SCHOOLS	MOSQUE	ADMIN. BLDG.	WATER SYSTEM	CURRENT STATUS WATER SYST.
<u>ABIS</u>							
Village I	484	Health Unit	*	*	*	*	Operational
Village II	688	Rural Hosp.	*	*	●	*	Operational
Village III	792	Health Unit	*	*	*	*	Poorly Maintained
Village IV	748	Rural Hosp.	*	*	*	*	Poorly Maintained
Village X	368	Health Unit	*	*	*	*	
Village V	666	Health Unit	*	*	●	*	Poor Pressure,
Village VI	1,098	Rural Hosp.	*	*	*	*	Intermittent Water
Village VII	490	Health Unit	*	*	*	*	Poorly Maintained
Village VIII	1,146	Rural Hosp.	*	*	*	*	Poorly Maintained Standpipes
<u>QOOTA</u>							
Village I	298	Rural Hosp.	*	*	*	*	Non-functional
Village II	326		[Self-help]		*	*	Non-functional
<u>KOM OSHEIM</u>							
Village I	N.A.	Rural Hosp.	*	*	*	*	Inadequate
Village III	96					*	Operational
TOTAL	7,200+	5 Health Units 6 Rural Hosp.	11 Schools	11 Mosques		13 + Water Systems	

TABLE I C: SUMMARY PROFILE OF SETTLERS AND INFRASTRUCTURE: AGRICULTURE

VILLAGES	ACREAGE RECLAIMED	AG. COOPS.	CURRENT ADMIN. AUTH.
ABIS I, II, III, IV, X	10,915 net cultivable acres	12 Agricultural Coops, organized under a common board.	Ministry of Agriculture, Alexandria
ABIS V,VI	6,000 net	5 Agricultural Coops.	Ministry of Land Reclamation (Buheira Governorate)
ABIS VII, VIII	6,297 net	6 Agricultural Coops.	Ministry of Land Reclamation (Alexandria)
TOTAL ABIS	30,000 gross		
QOOTA	4,000 gross	2 Agricultural Coops.	Ministry of Land Reclamation (Fayoum)
KUM OSHEIM	1,700 net 3,100 gross	1 Agricultural Coop	Ministry of Land Reclamation (Fayoum)
TOTAL GROSS ACREAGE	37,100		

**APPENDIX D**

**An Analytical History of EARIS**

**Richard H. Dekmejian**

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## I. PURPOSE AND METHODOLOGY

The purpose of this essay is to present an analytical history of the Egyptian American Rural Improvement Service (EARIS) which evolved during a period of fourteen years from 1951 to 1965. This analytical history will include an evaluative dimension, so that it could serve as a baseline document for a planned comprehensive field evaluation of EARIS; it is intended for use by AID and its Egyptian Mission for planning, design and implementation of possible future area development projects in Egypt.

The analytical history will be based on: 1) A detailed review of AID reports, evaluative documents and other archival materials and, 2) Interviews with twenty-two American foreign assistance personnel associated with EARIS. These materials have been supplemented by additional archival documentation, which have been acquired from the personal records of five of the interviewees. A critical approach has been utilized with the objective of identifying the strengths as well as the shortcomings of EARIS. A significant portion of the interviews were tape-recorded and transcribed. According to AID records collected by Patricia DeButts, approximately 90 American personnel were associated with AID/Egypt and EARIS. Only a handful of these individuals could be located due to death, retirement or change of residence.

## II. THE EGYPTIAN POLITICAL SYSTEM

Since early times, there has been a unique interaction of political authority, agriculture and irrigation in the Valley of the Nile. This crucial tri-dimensional linkage was first manifested in Pharaonic times; it continues to provide a key to understanding the dynamics of Egyptian society and its political economy. Despite the concerted efforts of the Nasserite elite in the area of industrialization, modern Egypt remains a "hydraulic society" as Karl Wittfogel has demonstrated in his seminal study of major river systems.

It is precisely because of this traditional linkage between central authority and irrigated land, that the EARIS project assumed singular importance within the Egyptian milieu of mid-twentieth century. Due to the endemic shortage of arable land in Egypt, there has always been an ongoing governmental concern with cultivation and irrigation schemes throughout Egyptian history. With the advent of the Muhammad Ali dynasty, the historic trend toward large scale state activity in irrigation projects was intensified. Under the British, particular attention was paid to the development of dams and irrigation networks. In the interwar period, successive Egyptian governments continued to exercise substantial control over agricultural expansion and irrigation. Consequently, the American involvement in EARIS was in the mainstream of Egyptian popular consciousness as well as governmental policy priorities.

The political system within which EARIS was to operate, initially, centered on the increasingly dysfunctional monarchy of King Faruq. The crises besetting the mixed monarchical-parliamentary system were already manifest during the late forties. The abortive Egyptian involvement in the 1948 Palestine War

further weakened the legitimacy of the King who had been beset with protracted struggles with the nationalist Wafd Party, the Muslim Brotherhood and the persistent British imperial presence in the Canal Zone. In the context of pervasive domestic turmoil marked by strikes, demonstrations and assassinations, the defeat of Egyptian arms in 1948 triggered a revolutionary process which culminated in the takeover of power on July 23, 1952 by the Free Officers led by Lt. Colonel Gamal Abd al-Nasser.

At the outset, the Egyptian military regime enjoyed manifest support from the Western powers particularly the United States; it was also able to evoke considerable mass support from the Egyptian people, because of its reformist policies and promises. Soon after the takeover, the Free Officers Executive reconstituted itself as the Revolutionary Command Council (RCC) to act as the supreme policy making organism of the state. An all-civilian cabinet under Prime Minister Ali Mahir was entrusted with executive power to carry out the RCC's policies, the first of which was agrarian reform. Due to the reluctance of Ali Mahir to implement these reforms, in September 1952, General Muhammad Nagib became prime minister amid increasing mass support for this fatherly figure who had been designated by the young officers as "Leader of the Revolution". By June 1953, four additional RCC members assumed key cabinet positions in the context of a growing rivalry between General Nagib and his young RCC colleagues. As president and prime minister, Nagib was able to garner the support of the outlawed political parties and the Muslim Brotherhood which were pressing for a return to civilian constitutional life, against the wishes of Nasser and his supporters. It was not until April 1954 that the Nasserite faction was successful in consolidating its power; in November 1954 General Nagib was dismissed from the government and placed under house arrest.

The ascendance of the Nasserite officer's group marked the beginning of institutionalized military rule in Egypt. During the mid-fifties, the political system increasingly assumed the attributes of praetorianism, as growing numbers of military officers were brought into the government bureaucracies to assure loyalty to the military elite. As a direct consequence of his nationalistic policies and Pan-Arabist orientations, Nasser emerged as the central personality of the revolutionary regime. His successful confrontations with the West subsequently brought him widespread popularity in Egypt and in the Arab world. By using the dual instrumentalities of Nasser's personal charisma and a single party system, the regime progressively mobilized the population to realize its plans for modernization of Egyptian social and economic life.

### III. THE SOCIO-ECONOMIC ENVIRONMENT

Despite the considerable efforts of the pre-revolutionary regime in promoting Westernization, Egypt remained a traditional society where Islam was the dominant value system. Since the opening up of Egypt to the West in the nineteenth century, the Islamic ethos came into conflict with intruding external ideologies--secular liberalism, socialism and variants of

Western nationalisms. The Islamic response to these intrusions ranged from selective incorporation to total rejection. The consequent destabilization of Egyptian society produced an identity crisis which was exemplified by polarization between Westernizers, Islamic fundamentalists, pharaonic nationalists, Arab nationalists and socialist internationalists. Thus, at the time of the 1952 Revolution there was no ideological consensus to guide the social and economic development of the country. During the late fifties however, the regime was successful in forging an ideological synthesis eclectically, by fusing certain socialist and etatist principles with Pan-Arab nationalism, which included a neutralist orientation in world affairs.

In the field of economic development, the regime's etatism first manifested itself in the Agrarian Reform Act of Sept. 9, 1952, which limited individual land ownership to 200 faddans. The government proceeded to distribute 430,000 faddans of excess landholdings to 120,000 landless peasants, thus delivering a formidable blow to the economic power of the large landowners and strengthening the regime's ties with the fallahin.

After encouraging foreign investments and domestic capitalism in the mid-fifties, the regime began to expand its role in the economy by widening agrarian reform and Egyptianizing foreign owned enterprises. During 1960-62, the regime nationalized the publishing industry, banks, insurance companies and hundreds of industrial enterprises. This trend continued until the late sixties when state ownership and control over the means of production became preponderant. In this period, economic development was initiated from the top in accordance with five-year plans which could not be fully implemented due to the intrusion of the June 1967 War and other instances of external involvement.

#### IV. THE INTERNATIONAL MILIEU

One of the most persistent phenomena in Egyptian history has been the unusually close interaction between the political economy of the Nile Valley and international developments. Since the Napoleonic conquest, Egypt's political and economic well-being has been inextricably intertwined with the interests of the great powers by virtue of Egypt's strategic location and related factors. The dramatic changes instituted after the advent of Muhammad Ali, which included military modernization and the growing of long-staple cotton, further contributed to Egypt's involvement in global politics and economics. Finally, the introduction of British power in 1881 transformed Egypt into a centerpiece of the British imperial system.

Given these circumstances of foreign subjugation, reaching back to the Pharaonic millenium, the Egyptian response was one of virulent nationalism which strove to achieve full independence and national sovereignty. During the interwar period, the Egyptian nationalist quest was directed against the British presence which manifested all the signs of permanence. Hence, the desire of many prominent nationalists to support the Axis Powers during World War II to bring about deliverence from British rule. After using Egypt as the epicenter for the Allied War effort, the British insisted on

maintaining large forces in the Suez Canal Zone, with the declared objective of defending the waterway.

Three other factors came into play to define Egypt's international environment after World War II. These consisted of the establishment of Israel, the rise of the Soviet Union and the growth of American power in world affairs. With the declining British position in the Middle East, there was an incremental substitution of American power to fill the resulting vacuum in the context of the Cold War. The American fixation on Soviet expansionism in the Middle East, brought massive commitment of military aid to Turkey and Iran, and the readiness to make similar arrangements with Egypt and the Arab world in general. However, this type of Cold War American approach to Egypt, possessed a serious flaw which eventually set the stage for the deterioration of US-Egyptian relations.

American policy makers failed to consider the objective needs of Egypt in the post-1948 period. In the Egyptian perception, the predominant external issue was not defense against the Soviet Union which did not share borders with Egypt or other Arab countries. The paramount concern was the presence of a powerful antagonist--Israel, which heightened the Egyptian and Arab sense of vulnerability and insecurity. Consequently, the American attempts to enlist Egypt and the Arab world in an alliance system (Baghdad Pact) against a remote potential antagonist like the Soviet Union, were destined to prove abortive. In the absence of a genuine American scheme to settle the conflict with Israel, Egypt's interests and priorities required the strengthening of its armed forces through the introduction of modern weaponry. The American readiness to satisfy this need was made contingent upon Egyptian willingness to join the US, Britain and France and their regional allies, in the establishment of a defensive alliance against the USSR. In view of the prevailing Egyptian-Arab sentiments against Britain and Israel, no Egyptian or Arab ruler could participate in such a Western alliance system without encountering massive domestic opposition. The logical outcome of this dilemma was Nasser's decision to accept modern Soviet arms in September 1955--an action that marked the beginning of a major reversal of American fortunes in the Arab World.

Aside from its security concerns vis-a-vis Israel, Egypt's most essential priority involved the acquisition of large-scale foreign aid. This fundamental need placed the US in a unique position to satisfy Egyptian developmental priorities. If implemented successfully, the US would assume a powerful economic position in the common heartland of the Arab and Islamic worlds. Indeed, in terms of its wealth, technical advancement, and superior reputation, the US was the only country which was capable of bringing about a comprehensive economic transformation in the politically crucial Valley of the Nile.

Therefore, the conceptualization and implementation of the EARIS project took place within the foregoing international, regional and domestic parameters. While its specific goals were purely developmental, it was recognized that the ultimate impact of EARIS would be political as well, particularly as it reflected on American capabilities and the creation of pro-American attitudes and sympathies among the Egyptian people. With the increasing politicization of Egyptian-American relations during the mid-fifties, it became ever more difficult to separate EARIS and the US Aid Mission from the political turbulence of the larger environment. It was

no mere accident that in 1956 and 1965, American developmental efforts in Egypt fell victim to political vicissitudes, wars and confrontations.

## V. A HISTORY OF POINT IV AND EARIS: 1951-1965

An overall chronological view of Point IV and EARIS indicates several distinct phases through which the programs evolved between 1951 and 1965. The first phase, consisting mainly of Point IV technical assistance, provided both the background of EARIS as well as a transitory period devoted to negotiation, and preliminary planning, all undertaken during 1951-53. The second phase, involving detailed planning and implementation of EARIS proper, began during 1953 and ended with the departure of the US TCA Mission in November 1956 as a direct consequence of the Suez War. Phase III was marked by the resumption of US aid in 1959 and ended with the completion of the US role in EARIS in 1964. In terms of reconstructing the complete history of EARIS, it would be necessary to account for developments during the years 1957 and 1958--a period when EARIS was under Egyptian administration. However, due to the lack of documentation on the American side, it will not be possible to cover this two-year gap without examining Egyptian archival materials.

The following is a chronological analysis of the phases of the EARIS project.

### PHASE I: THE POINT FOUR AGREEMENT--AN OUTLINE

May 5, 1951: General Agreement for Technical Cooperation under Point IV Program between Egypt and the United States, signed in Cairo, to enter into force August 15, 1951. Purpose: The two governments undertake to cooperate in the interchange of technical knowledge and skills and inter-related technical activities designed to contribute to the balanced and integrated development of the economic resources and productive capabilities of Egypt.

The US will provide:

- 1) Technical experts
- 2) Training of Egyptian personnel in the US.
- 3) Equipment and materials

Egypt will provide:

- 1) Office facilities and related equipment for successful project implementation
- 2) Payment of costs of land, buildings, improvements, etc.
- 3) Payment for transport and communication for Egyptians traveling to and from the US
- 4) Egyptian technicians to work with US technical personnel

The agreement also provided for the submission of annual reports concerning the progress of the projects.

February 21, 1952: Nine months after the conclusion of the initial Point IV Agreement, discussions were initiated by Foreign Minister Ali Mahir of the Royal Government of Egypt, and US Ambassador Jefferson Caffery, relating

to an expansion of the technical assistance program. On February 21, 1952 Ali Mahir formally requested from the US Embassy to expand the Point IV program.

July 23, 1952: The overthrow of the monarchy and the establishment of a mixed military-civilian regime under the auspices of the Revolutionary Command Council (RCC) headed by General Muhammad Nagib.

September 9, 1952: The promulgation of the Agrarian Reform Act limiting individual land holdings to 200 faddans.

May 19, 1953: Agreement between the US, and Egypt for a cooperative program of community development and rural rehabilitation in the provinces of Buheira and Fayoum. This was the basic agreement under which EARIS was developed and implemented.

## PHASE II: THE EARIS PROJECT (1953-56)

### Objectives

The General Agreement for Technical Cooperation concluded on May 5, 1951 provided the framework under which the EARIS Agreement of March 19, 1953 was concluded. It follows that, the radical change of regime did not adversely affect the continuity of US assistance programs in Egypt. On the contrary there is considerable evidence that the American Embassy welcomed the opportunity to work with the revolutionary regime.

In terms of its general objectives, the EARIS agreement provided for a cooperative effort between the US Technical Cooperation Administration and the Permanent Council for the Development of National Production,

"to improve the social and economic conditions throughout all Egypt, by carrying out a broad demonstrational program of development which attacks, through self-help, community participation and direct assistance, the basic problems of rural life for the people in the Provinces of Buheira and Fayoum."

The goals of the EARIS agreement were wide in scope and ambitious in objectives. No less than twelve distinct operations were included in the original instrument. These were:

- 1) The reclamation of approximately 80,000 faddans of new land.
- 2) The construction and development of improved housing and community facilities.
- 3) The resettlement of approximately 16,000 landless farm families on reclaimed land.
- 4) Financial and other assistance to farm cooperatives.
- 5) Demonstrations of improved water conservation and management practices and the extension of irrigation, drainage, and navigation services to new lands and lands now under cultivation.

- 6) The establishment of vocational schools and environmental training of farm youth in the fundamentals of scientific agriculture and irrigation practices.
- 7) The provision of agricultural extension and demonstration services.
- 8) The improvement of the marketing and processing of farm produce.
- 9) Improvement of the levels of public health, through environmental sanitation, clinical services, training and health education.
- 10) Aid in the development of small industries and handicrafts.
- 11) The improvement and development of farm-to-market road systems.
- 12) Such other related activities as the Co-Directors may agree upon as being essential to the success of this demonstration in community development and rural rehabilitation.

### The Technical Mission

The TCA agreed to provide the technicians and specialists who would be a part of the Technical Mission headed by a Director of Technical Cooperation. All Technical Mission personnel would be subject to "acceptance" by the Egyptian government.

### Joint Funding And Management

The cooperative programs were to be administered by the Egyptian-American Service for Rural Improvement (EASRI), an agency of the Egyptian government. The Egyptian President of the Permanent Council and the US Director of Technical Cooperation would serve as Co-Directors of EASRI which later was called EARIS by transposition of its title.

The Co-Directors would oversee the joint funding of EARIS. The initial contribution of the two parties for the period May 19 to June 30, 1953 was \$10,000,000 deposited by the US and LE5,450,000 deposited by Egypt. In addition, Egypt agreed to provide specialists, office-space, equipment and related services.

### Project Operations

EARIS would be implemented through a series of jointly planned and administered projects, to be consummated through separate written agreements. Upon completion of any project, the Co-Directors were to submit a report of achievements, expenditures and basic data. The selection of Egyptian trainees, the disbursement of funds, and the appointment and discharge of personnel would be the joint responsibility of the Co-Directors.

The EARIS agreement would remain in force until December 31, 1960.

### Planning

Evidence gleaned from documentary materials and interviews indicates a substantial measure of commitment and dedication on the part of US TCA personnel. Collectively, they may be characterized as 'men in a hurry' anxious to demonstrate the practical feasibility of the EARIS project. It appears that considerable early planning was done late in 1952 under Dr. John R. Nichols, the Mission Director. In February 1953, E. Reeseman Fryer of the Ford Foundation, had advanced a proposal on village planning

and resettlement which was based on safeguarding the traditionally close-knit Egyptian village community. This report acknowledged the failure of previous efforts to improve village housing due to high cost factors and lack of concern for the fallah's life-style. Fryer took care to emphasize that village housing should not "violate his (fallah's) concern for his stored grain, his poultry and animal and his intense gregariousness". He further stated that the new villages should be limited to 600 families each, should include wide streets, a mosque, piped water supply and community center (school, a meeting room, health clinic, community bath and training facilities).

The planning process had advanced considerably by April 1953 to the extent that A.B. Bonds, the Chairman of the TCA planning committee, could submit to the Egyptian National Production Council a memorandum identifying certain areas of development for EARIS. These were:

- 1) Land reclamation and irrigation including soil surveys, water resource inventories and information on family resettlement
- 2) Education as it related to curriculum improvement, classroom building and teacher training
- 3) Health and sanitation including potable water, environmental sanitation, health centers, child welfare centers and health education
- 4) Increased food production through agricultural extension education, agricultural credit, livestock production, marketry, transportation, forestry, etc.
- 5) Home industries.
- 6) Housing and village planning to reduce urban migration.
- 7) Development of natural resources in Buheira and Fayoum

Perhaps the most significant aspect of A.B. Bond's memo was his concern with achieving integration and balance in the process of planning and implementation. Therefore, he emphasized the need for weekly joint meetings of the TCA Planning Committee and the National Production Council, as well as coordination between Egyptian and American technical personnel.

In terms of the early phase of planning, the months of April and June 1953 appear to have been particularly significant, partly due to the temporary assignment of Mr. Afif I. Tannous to the EARIS Task Force, who was based in the Beirut office of the US. Agriculture Department. Mr. Tannous was instrumental in preparing twelve memoranda which contained recommendations on the operations of EARIS Task Force, rural community development, peasant participation in planning, and procedures to strengthen village organization. Particularly noteworthy were his detailed suggestions concerning village community organization. These included:

- 1) A detailed procedure of selection of settlers
- 2) Psychological preparation of settlers prior to their resettlement
- 3) Building rural community leadership

- 4) Careful selection and preparation of government officials assigned to the new villages
- 5) The organization of village councils
- 6) Development of community centers
- 7) Utilization of religious institutions to further village community development
- 8) Expansion of recreation facilities
- 9) Organize women to improve home life and increase their participation in community affairs
- 10) Expand activities outside the EARIS area into neighboring communities.

In his far-reaching recommendations, Tannous revealed his unique grasp of Egyptian rural lifeways as only a native son of the Arab World was capable of doing. He stressed a number of basic principles:

- 1) The Egyptian village is an integrated functional socio-economic unit.
- 2) The EARIS Program, therefore, emphasizes the integrated approach to this way of life
- 3) The stimulation of self-help is the basic method in the operation of the Program
- 4) The primary responsibility for the Program must be shouldered by the Egyptian government and the rural people themselves
- 5) EARIS will be in charge for a limited period after which the Egyptian government will take over the project
- 6) US financial and technical aid is intended primarily as a demonstration of certain methods and techniques which could bring about most effectively the improvement of Egyptian rural life.

#### Integrated Planning: The Hannum Interregnum

In May 1953, Erwin C. Hannum arrived in Cairo to take over as Chairman of the TCA Task Force for EARIS to collaborate on program planning. An interdisciplinary team of fifteen American experts was assembled in Cairo to work with an interdisciplinary/inter-ministerial Egyptian cadre of thirty specialists. The Task Force worked with the Egyptians until August 1, 1953, when it was abolished and replaced by the new EARIS organization--an agency of the Egyptian government. Meanwhile in June 1953, Hannum became Acting Country Director for TCA/Egypt with responsibility for all planning and implementation activities. Under Hannum's stewardship, there was special emphasis on comprehensive and integrated planning, which had been started under the previous director Jack Nichols, and Cye Fryer, who had been instrumental in negotiating the EARIS Agreement. Hannum signed three important agreements under EARIS, in the fields of Education, Public Health and Sanitation. In September 1953, Admiral Harold Stevens was appointed Country Director, and after a brief absence Hannum returned to Egypt as Deputy Director of the Mission in January 1954. Until his reassignment to Libya in June 1955, Hannum was involved in negotiations which culminated in an Economic Aid Agreement granting Egypt 41 million dollars.

A plethora of proposals were advanced by the members of the US staff during the Summer and Fall of 1953 which covered most aspects of the EARIS

project. Among these were:

- 1) A soil and land classification survey (E. Hannum/Lindsey A. Brown)
- 2) An audio-visual program to expand and improve agricultural, hygienic and social conditions of peasants. (Harry L. Carr)
- 3) Three pilot agricultural projects involving the sowing of hybrid maize, pure seed and the use of chemical fertilizers (Dean McKee)
- 4) A laboratory to investigate soil salinity (Lindsey Brown)
- 5) Health and sanitation program (H. Jackson Davis)
- 6) Construction of water treatment plants at Abu Hummus (H. Jackson Davis)
- 7) Agricultural extension program
- 8) Land reclamation and development (H. T. Jorgenson/Ellis Armstrong/Lindsey Brown)
- 9) Community development and rural rehabilitation (Hannum)
- 10) Housing and construction
- 11) Comprehensive educational program (A. B. Bonds)

The Task Force worked with six separate committees, which had a majority of Egyptian members. These committees were: Agricultural Services, Community Organization, Education, Housing, Public Health and Reclamation. The Task Force consisted of fifteen US specialists: Ellis Armstrong (Reclamation); A.B. Bonds (Education); Lindsey Brown (Soil Science); Harry Carr (Audio-Visual Aids); Sherman Conover (Budget and Management); Jackson Davis (Public Health); Frank H. Elmore (Law); Edwin J. Fleener (Accounting); Frederick Fiohrschutz (Sanitation); Erwin C. Hannum (Chairman, Task Force); Wendell Holman (Agriculture Extension); Barton P. Jenks (Housing and Community Planning); Harold T. Jorgenson (Land Management); Clyde F. McKee (Agriculture); Afif Tannous (Rural Sociology).

After extensive study, each of the sub-committees presented detailed reports, plans and recommendations relating to their areas of competence. By September 1953, the organizational structure of EARIS had been established (Annex 1) and Chairman Hannum was able to present a detailed forty-nine page report on EARIS plans and activities.

### American Role Perceptions, Goals And Expectations

On the basis of Task Force reports and recent interviews with some of the participants, it is possible to reconstruct the impressions, perceptions, views and expectations of the American specialists who worked in Egypt during 1951-53. A total of seven American personnel were interviewed: Hannum, Tannous, Bonds, Hanson, Jorgenson, Armstrong and Platt. Their recollections are remarkably similar regarding the early years of EARIS. Taken together, the reports and the interviews indicate an optimistic consensus among the US staff regarding the revolutionary regime and its seriousness and dedication to the betterment of Egypt. They were particularly impressed with the new spirit of hope among the Egyptian people brought about by the Revolution, and the high level of technical competence of the Egyptian personnel. Relations between US and Egyptian personnel were reported as being excellent. Furthermore, the American Mission was able to acquire

a clear perception of Egyptian reality--population pressure, limited cultivable land and abject poverty. To be sure, there was considerable idealism among the American personnel, with a clear sense of mission "to help the Egyptians to help themselves." Yet the idealism was tempered by realism, despite some of the overidealistic and excessively ambitious orientations of the young military officers and their civilian advisors.

In working with their Egyptian counterparts, the US staff often found it difficult to conclude agreements. They noted an Egyptian tendency to postpone the finalization of tasks and projects. However, once an agreement was signed, the Egyptian-American team tended to work effectively on its implementation. In the Americans' perception, EARIS was an unprecedented joint effort, since it involved building a completely new type of community of villages with self-contained enterprises. It was understood that EARIS was a pilot project which had to be demonstrable, repeatable and above all culturally Egyptian. Having experienced the psychological pains of inferiority under British imperial rule, the Egyptian personnel were sensitive to the possible manifestation of patronizing attitudes on the part of the US personnel. Hannum discusses this point in his Task Force Report. He relates Egyptian uncertainty about the American role including the fear about US direction of EARIS, through an organization paralleling the Egyptian bureaucracy. However, these apprehensions were laid to rest by September 1953, when Hannum emphasized that the "role of an American collaborator is that of an advisor." The main US function would be to provide advice, suggestions and assistance in planning and implementation. The areas of decision making and administrative direction would be the responsibility of Egyptian officials.

There were also points of disagreement between the Hannum group and the Egyptian National Production Council on planning and organizational philosophy. While the Egyptians desired to first set up the EARIS organizational structure, the US team under Hannum insisted on identifying the specific dimensions and objectives to be achieved. Moreover, the Egyptians were not initially interested in Hannum's comprehensive, multi-dimensional approach. Ellis Armstrong states that at the outset, the Egyptians wanted "an engineer and a soil scientist," since they were narrowly concerned with the physical aspects of the EARIS project. In fact, the National Production Council was mainly interested in the public works phases of the program--irrigation and land reclamation; consequently, it turned down American suggestions regarding public health, education, agricultural extension and community organization projects. It was not until June 1953, that Dr. Muhammad Salim and others on the National Production Council were persuaded through ingenious graphic representations, of the wisdom of the American approach. It was at this stage that the basic operational procedures were agreed upon and six committees were organized (see above) to plan and coordinate the interrelated activities of EARIS. The Abis area in Buheira province was designated as the main focus of developmental activity. By September 1953, Egyptian-American planning had substantially crystalized to permit systematic implementation. Its basic characteristics are presented in summary form:

1. As a pilot project EARIS should integrate and build upon the many projects and activities undertaken previously by the Egyptian government. However, in its comprehensive approach, EARIS should offer something new and unique to reflect the advantages of American techniques of planning, coordination and balanced development.

2. In emphasizing its potential for emulation, EARIS should be designed to substantially contribute to the improvement of social and economic conditions throughout all Egypt.

3. It is desirable that specific results and tangible benefits be obtained at an early period--within three years.

4. EARIS programs should be based on longterm planning, taking into account living conditions in ten, twenty years and beyond.

5. All initial plans should be regarded in a dynamic context, to be reviewed annually and adjusted to changing conditions.

6. In terms of specific goal attainment, the Abis area would be divided into three tracts totalling 20,000 faddans. The estimated dates for reclamation and settlement were:

- a) 1120 faddans - Nov. 1954
- b) 4480 faddans - Nov. 1957
- c) 14,400 faddans - Nov. 1959

As to Fayoum province, only 13,000 of the available 62,000 faddans of desert would be reclaimed at an undefined period.

7. The total projected expenditures through the fiscal year ending June 30, 1959 were as follows:

-Irrigation canals, drainage, pumping stations, land preparation and cropping	LE 1,750,000
-Housing	1,050,000
-Community facilities and utilities	280,000
Total	<u>LE 3,080,000</u>

(or \$8,870,400 over a six year period)

There was to be additional expenditures for equipment, supplies, materials, education, health and community development (Annex 2).

#### "Stassenization" Of TCA And EARIS

The year 1953 was significant in two respects. First, it marked the 'take off' phase of EARIS, during which the basic patterns of planning and organization were established. Second, 1953 became a turning point in US aid policy in terms of its philosophy and objectives. This transformation was a direct consequence of the advent of the Republican Administration after General Eisenhower's election to the Presidency in November 1952. It should be noted that under the Point IV Program, the basic thrust of the TCA was "to help people help themselves" whereby the emphasis centered on the development of human resources and human beings. This humanistic approach was altered with the appointment of Harold Stassen to head the Mutual Security Administration (MSA). At the outset there was a strong urge to liquidate the whole TCA Program. After dismantling some aid programs, the new administration reversed itself since the demand for foreign economic assistance was strong and its importance so manifest. However, under Stassen, US aid policy placed less emphasis on developing agriculture, health and

education, while stressing industries, highways and similar projects which did not focus on development of individuals, families and groups.

As far as EARIS was concerned, this shift of emphasis did not have an immediate impact. Only in later years did this change of policy affect the allocation of US foreign assistance funds. The more immediate consequences of "Stassenization" involved staffing and programmatic outlook. Instead of appointing Cye Fryer who had negotiated the EARIS agreement as Director, Stassen sent to Egypt Admiral Harold Stevens who had worked under him as supervisor of building and grounds during Stassen's presidency at the University of Pennsylvania. According to testimony of the EARIS staff, the Admiral's narrow outlook and military disposition were not conducive to the smooth functioning of the EARIS operations. In terms of programmatic philosophy, the change of appellation from TCA to Foreign Operations Administration (FOA) denoted a stronger linkage between US foreign aid and political interests in the context of the Cold War. Indeed, the evidence from interviews clearly indicates the political motivation of the Eisenhower Administration in making a lump sum of ten million dollars available as upfront cash on June 30, 1953, to woo the Egyptian military regime. Yet, despite the increasing politicization of the Middle Eastern and Egyptian milieu, the EARIS project does not appear to have been influenced adversely in the first three years of operation.

#### EARIS In Operation: 1954-55

While 1953 was a year of planning and organization, the three subsequent years were characterized by the pragmatic concerns of project implementation. This was indicated in a progress report submitted by Dr. M.M. El Azzouni, the EARIS Administrator, to his Co-Director, Admiral Stevens, dated March 23, 1955. Azzouni's report, which recounted EARIS activities until Dec. 31, 1954, contained a major discrepancy in objectives when compared with US Task Force reports issued in September 1953. Azzouni stated that the EARIS project was to reclaim 80,000 faddans for the settlement of 16,000 families. This figure was four times that projected by Hannum's Task Force which totalled 20,000 faddans. One explanation for Azzouni's inflated figure may have been the Egyptian desire to reclaim lands which the Task Force did not consider reclaimable or cost effective.

According to Azzouni's report, nine projects were approved and funded by Dec. 1954. These included expenditures for the EARIS Administration, soil classification survey, major works in Abis, land reclamation in Abis, Abis Village No. 1, major works in Qoota, heavy equipment, road construction in Abis, and land reclamation in Qoota. Under Azzouni, the EARIS administrative organism consisted of nine sections: Legal Advising, Land Reclamation, Planning and Housing, Public Works, Community Services, Budgeting and Programming, Procurement and Stores, Personnel and Accounts--all of which were fully staffed. In other areas of EARIS operations, 1954 saw the completion of soil and land classification surveys, Abis drainage projects and the plans for village building. In the Abis area, ten villages were to be constructed; in the Qoota area three villages were planned. Also, there was considerable progress in canal building, roads, the construction of bridges and cultivation of redrained lands. The construction of Village No. 1 in Abis was progressing satisfactorily--284 housing units were completed, water pipelines were installed, electricity units were in

place and American machinery, cars and equipment were brought from the Sudan on a gratis basis. Azzouni optimistically reported that Village No. 1 was ready to receive settlers who would be given reclaimed land in March 1955.

In the area of staffing, it appeared that by mid-1954 Stevens had succeeded in establishing the basic patterns of operation and interaction among the American personnel and with the Egyptians. However, he was faced with a recruitment problem in filling all the positions on the EARIS staff. In August 1954, seven out of eighteen positions remained vacant.

Stevens' staff consisted of three types of USOM personnel: (1) Technicians brought to Egypt specifically to give technical advice and assistance to EARIS. These people were expected to spend more than half of their time with the EARIS program, and the rest on non-EARIS activities. (2) Technicians brought to Egypt for assignment to non-EARIS projects, but with the recognition that they would give EARIS some assistance if requested. (3) Administrative and program direction staff of the Mission, who periodically would assist in the development and coordination of the EARIS program. All coordinating activities were centered in the office of the Deputy Director of the Mission who held periodic staff meetings with the US personnel. In certain areas, the EARIS staff was involved in direct supervision, as was the case with the construction of village No. 1. Elsewhere, EARIS personnel developed plans and objectives which were implemented through Egyptian liaison officers representing the ministries of Health, Education, Agriculture and Social Affairs. In addition to their administrative functions at the Cairo EARIS headquarters, the staff would visit the Abis project periodically. With the increasing activity at Abis during 1954, it became necessary to post an EARIS supervisor to oversee field operations in that area.

### Recurring Staff Problems

Despite the generally optimistic reports of 1954, not all was well with EARIS and the USOM itself. In response to substantial discontent within the USOM, Admiral Stevens charged Edward Felder, Program Officer, with the task of investigating the various activities of the Mission. On Jan. 10, 1955, Felder submitted to Stevens a 14-page evaluation of USOM operations which contained major recommendations to institute reforms. These far-reaching suggestions were adopted by Stevens to a significant extent. Felder's diagnostic evaluation indicated serious problems involving staff morale, lack of commitment, unclear lines of responsibility, unfamiliarity with Egyptian customs and culture, inadequate compensation for US personnel and difficulties in obtaining adequate housing. The more important recommendations of Ed Felder's report are summarized below:

1. The establishment of a Policy Planning Staff, to carry on continuing studies of policy and operating problems.
2. The freeing of the Director and his Deputy from staff work and operating details, so that they may devote full attention to overall policy and decision-making.
3. The freeing of the Deputy Director from detailed staff work on EARIS and development assistance by (a) the creation of a position of Chief of EARIS Operations Staff and by (b) the creation of a position of Economic Advisor.
4. To employ a Public Information Officer to take care of VIP visitors since too many technicians had devoted too much time from their regular work to show VIPs around their projects.

5. To provide mandatory orientation for all newcomers, concerning the USOM/E, the Egyptian government, the local culture and institutions.

6. To offer special Arabic language classes on the Mission premises, as well as lectures on US foreign policy, and the Arab world.

7. To increase post allowances to cover the expenses of more frequent illnesses and to help US personnel to find adequate housing.

8. To withhold decision for the time being on any plan involving the location of families in rural areas of substandard living conditions, health hazards and lack of educational facilities. It was recognized that the work of most projects was done with Egyptian counterparts in the ministries, and US personnel would be located in project sites when appropriate for the conduct of specific programs.

9. To build up the morale of the staff by establishing suggestion boxes, welfare committees, a newsletter, welcome committees and by encouraging social events.

10. To provide awards and incentives to encourage exemplary performance, thereby promoting increased productivity and commitment, and the possibilities of returning to Cairo for additional tours of duty.

11. To direct US technicians to devote more time to jointly developing the details of a given project with their Egyptian counterparts.

12. To emphasize that project planning in all phases of development must be a joint undertaking between US and Egyptian technicians with a complete understanding of their respective responsibilities to proceed promptly and efficiently following the signing of the project agreement.

13. To request that the Director discuss with the highest echelons of the Egyptian government its failure to provide counter-part personnel in certain projects.

14. To institute through a questionnaire, a mechanism for evaluating and measuring progress on projects prior to, during, and after implementation.

It was obvious from Felder's investigations, that in certain salient areas there existed serious problems which concerned EARIS, the larger Mission, and US-Egyptian working relationships. The Egyptian government's failure to appoint a sufficient number of technical personnel, combined with the reported difficulties in joint planning and implementation, betrayed the existence of a degree of organizational inertia in the joint effort. Egyptian-American relations were further exacerbated with "the attitude of superiority on the part of some American personnel" as reported by Felder and others in recent interviews.

The full dimensions of the difficulties in EARIS were revealed in the Comptroller General's Audit Report to the US Congress on June 30, 1955. There had been complaints from the American technicians in EARIS, that their advice had not always been followed especially in the field of community development, and that existing administrative arrangements did not give them a voice in operating decisions. The Report also revealed that EARIS operations until mid-1955, involved higher costs than originally estimated; as a result, the Egyptian goal of reclaiming 80,000 faddans was reduced to less than 40,000 faddans. The construction of Village No. 1 was

particularly expensive, and EARIS expected to reduce the cost of Village No. 2 by 30%. The operations of desalting and reclamation were reported to be costly and time consuming. As to staffing, the Controller General recommended a reduction of EARIS personnel from 22 to 16 since some of the personnel were not needed on a full-time basis.

On the positive side, the Report stated that 11.6 million dollars (4.6 million dollars being the US share) had been expended on: flooding and leaching 5,000 faddans, cultivating 1,700 faddans, building drainage systems, roads, pumping stations, in addition to near completion of Village No. 1 consisting of 262 houses for settlers and 46 houses for professional employees. Progress was delayed in Fayoum Province due to lack of special equipment and other unstated reasons. Finally, the Report suggested a broadening of Egyptian criteria for the recruitment of farm families to settle in Village No. 1. It presented a financial plan drawn up by EARIS, whereby the settler would repay the Egyptian government for his home and farm land--LE 855 or \$2,460--at an interest rate of 3%. The investment was calculated as follows:

Value of unimproved land	LE 180
Cost of reclamation	345
Cost of house	330
Total investment	<u>LE 855</u>

#### EARIS In A Turbulent Political Milieu (1955-56)

On September 21, 1955, the Chief of EARIS Operations Staff, Roscoe E. Bell, wrote a memorandum to Admiral Stevens, in which he spoke in somber tones about "certain situations which have developed in the past year... which could not have been foreseen at the time the Division was created."

Roscoe Bell's calm and objective analysis substantially understated the magnitude of the problems besetting EARIS, which were a direct consequence of the progressive deterioration of American-Egyptian relations during 1955. In causal terms, this deterioration was the result of differences in priorities between Egypt and the United States. The overwhelming foreign imperative for the Egyptian Revolutionary regime was the growth of Israeli power and the consequent need to strengthen itself militarily and politically. In sharp contrast, the Eisenhower Administration was singularly preoccupied with the containment of the Soviet Union. In this context, Egypt was seen as another chain in the string of potentially anti-Soviet "Free World" states which Secretary Dulles aspired to establish. Increasingly therefore, the EARIS Project and the more extensive US commitment to build the Aswan High Dam, became the instrumentalities through which President Abd al-Nasser of Egypt was being pressured to join the newly created Middle East Defense Organization (The Baghdad Pact). In view of this clash in priorities and perceived interests, it was no mere coincidence that the US role in EARIS perceptibly declined during 1955-56. In the Egyptian perception, Dulles' invitation to join a military alliance directed against a remote "enemy"--the Soviet Union--in exchange for large-scale economic aid and some weapons, was undesirable and inconsistent with Egypt's security interests vis-a-vis Israel and the Arab world.

In terms of US-Egyptian relations, 1955 constituted a turning point which directly affected the fortunes of EARIS. In February 1955, Nasser rejected the Bagdad Pact, in April he declared Egypt's neutrality at the Bandung Conference in Indonesia, and in September he concluded a massive arms deal with the Soviet Union through Czechoslovakia. The stage was set for the more cataclysmic events which were to mark the end of the first stage of the American participation in EARIS.

Therefore, Roscoe Bell's observations and recommendations of Dec. 21, 1955, came at the end of a politically difficult period. Consequently, Bell considered it necessary to advance specific suggestions designed to defuse potential areas of conflict between American and Egyptian personnel within EARIS. It is significant to note that Bell was instinctively employing the classic tactics of conflict management which reflected his sensitivity and clear grasp of political realities. Bell observed that changes in Egyptian governmental attitudes have made it inadvisable to designate the Chief of the EARIS Division as Deputy Co-Director and Chief Collaborator with the EARIS Administrator as originally contemplated. He also reported that close contact and association between the Chief of Division and the Egyptian Administrator and staff members were being viewed with suspicion. Furthermore, the position of the Division Chief was becoming difficult, since he could not avoid coming between the US staff and the EARIS Administrator and between the US Co-Director and Administrator. Bell considered the situation "intolerable" to the Administrator as well as to the Division Chief.

Aside from these micro-level staff problems, it had become apparent that increasingly, EARIS was being completely administered by its Egyptian staff members. Already, the passage of Law No. 306 had resulted "in a substantial transfer of responsibility and authority from the Co-Directors to the Minister of Production." Under these circumstances, it was recognized that EARIS had become an Egyptian governmental enterprise, which necessitated a fundamental transformation in the US role and the attitudes of the American staff. In order to effect this organizational and psychological change with a minimum disruption, Roscoe Bell made several recommendations which are summarized below:

1. Since the Egyptian Administrator and his staff are carrying complete responsibility for program execution under the Co-Director, pre-auditing of the Administrator's actions by US technicians is neither possible nor desirable for the following reasons:

- a) The EARIS Egyptian staff is technically competent.
- b) The Co-Directors must have confidence in the Administrator and his recommendations and must express that confidence in acting upon his recommendations.
- c) On the basis of experience, the US Co-Director should be convinced "that the Administrator and his assistant accept responsibility and give sound technical judgement."
- d) Even if a pre-audit was desirable, a sufficiently large and capable US staff could not be maintained as an effectively functioning body since:

-Business is conducted in Arabic and the US staff "can be easily misled."

-Any attempt by US technicians to check on the Egyptians could be interpreted as "spying on them." Such a mistaken belief that checking was one of the functions of the US staff "has been the source of difficulty in the past."

e) In any disagreement between the Administrator and US technicians, Director Stevens must accept "the recommendations of the Administrator if they are at all reasonably good."

f) Since the post-audit system of the phases of the program constitute an adequate safeguard, the US Fiscal Advisor should be rendering advisory and consultative, rather than executive services.

2. EARIS has now reached the stage where full-time service of most technicians is unnecessary. Full-time assignments of US staff tends to place them in a position "where they become involved or may want to become involved with operational matters rather than program and training activities." The resulting frustration, irritations and conflicts reduces the collaborative effectiveness of US technicians.

3. The EARIS Division should be abolished and technical services to EARIS be provided by technicians administratively attached to other Divisions in the Mission.

4. In order to assure a smooth transition, the foregoing reorganizational plan should be discussed with Drs. Fahmy and Azzouni, and implemented as soon as possible, but certainly not later than June 30, 1956.

Roscoe Bell concluded his memorandum by presenting an assessment of various EARIS programs, by identifying specific areas of needed American involvement. These are summarized as follows:

1. General Administration--There is continuing need for limited staff service to the Director. In EARIS there is need for management counselling and office practices (Two full-time specialists are needed).

2. Engineering and Public Works--The only remaining major field for US contribution is in canal lining techniques (one full and one part-time engineer).

3. Land Reclamation--Until now there has been a necessary preoccupation with heavy duty equipment; nothing has been done in developing economical techniques of earth moving and adapting equipment to this purpose (two full-time instructors).

4. Road Construction--This has improved materially as two road contracts have been completed and the next job is several months away (part-time service only, by consulting firm).

5. Housing Village Design and Building--One village completed and the second is for bids. EARIS leadership is competent, but continuing consultation is desirable to design and build the nine remaining villages (regular part-time consultant).

6. Agriculture--Continuous on the job training of agricultural extension workers is the key to successful resettlement (one full-time agricultural extension specialist).

7. Agronomy, Crops, Soils, Agricultural Economics--Continuing work is needed in appraisal of reclamation progress, the introduction of cotton substitute in the farm economy, and the measurement of reclamation costs. Since there exists trained Egyptian personnel in these fields, it should be possible to phase out the US role over the next two years. Special assistance in vegetable production and marketing should be provided (two agronomists and three other specialists full-time).

8. Community Development--This is a basic function which should permeate all operations dealing with people. Continuing consultation will be necessary (Community development advisor 1/3 time).

9. Education--There is continuing need for rural and specialized service in this experimental and pioneering field (rural education Specialist 1/4 time).

10. Health--Continuing need to develop clinical, preventive and sanitation services (best provided through the Joint Health Committee).

It is manifest from the overall tenor of Roscoe Bell's report, that the American approach to EARIS at the Mission level was one of persistent accommodation to a social and political environment that was becoming increasingly inhospitable. While some of Bell's suggestions might seem in retrospect bordering on appeasement, it was the only constructive approach that could be followed in those circumstances. Indeed, during the first months of 1956, the Mission may have had some reason to hope that soon US-Egyptian relations would improve after a brief hiatus, and that wisdom would dictate a policy of assuming a low profile. However, such hopes were destined to be doomed. In June 1956, Dulles suddenly announced the cancellation of the US offer to build the High Dam, which brought an equally dramatic response from Nasser--the nationalization of the Suez Canal Maritime Company on July 19, 1956.

Virtually all USOM/E personnel who were interviewed, regarded Dulles' action as disastrous in terms of EARIS and overall US interests in the region. In fact, until the announcement of the decision, there were objective reasons that could have induced the two parties to reverse their headlong drift toward confrontation. From the Egyptian perspective, the cancellation of the High Dam offer appeared to be directed at Nasser personally, with the aim of overthrowing or at least humiliating the Revolution. After all, the High Dam had become in Egyptian eyes the centerpiece of the Revolution's promise of a better life for the Egyptian masses. Implicit in Dulles' action was his failure to comprehend the fundamental changes which had transpired during 1955 in Egypt and the Arab world--the emergence of a charismatic leader and regime, which through its policies of confrontation with the West and fiery nationalist rhetoric, had galvanized the masses in Egypt and the Arab world. Indeed, the Egypt of mid-1956 was a far cry from the Egypt that Dulles had visited in 1953.

The American decision not only destabilized the sociopolitical milieu of EARIS, but also destroyed its original raison d'etre. To be sure, the initial US motivation in instituting EARIS had been to develop a large-scale demonstration project which through its beneficial impact, was expected to pay dividends in good-will and political rapprochement between Egypt and the US. Moreover, there existed a strong conceptual linkage between the American involvement in EARIS and the projected US role in building the High Dam. While this linkage is not readily apparent in the various official USOM/E documents, it did exist in the minds of US planners and technicians working for the Mission and EARIS itself. A large number of those interviewed repeatedly stressed the organic tie between EARIS and the High Dam, in the sense that EARIS was considered a first step

of a much larger US design for the Nile Valley based on the Sadd al-Ali. Consequently, the withdrawal from the High Dam project dramatically undermined the US effort in EARIS, and at the same time "reduced its political significance to zero."

Despite the increasing turbulence in the Egyptian and Middle Eastern milieu after the nationalization of the Suez Canal, the Mission's policies appeared to have followed Roscoe Bell's guidelines set in December 1955. The available documentary evidence reflects continued optimism on the part of the US staff. There seems to have been a concerted tendency to view EARIS in isolation from its politicized environment. A Progress Report issued sometime after June 30, 1956, contained placatory terminology ostensibly designed to shore up the staff's declining influence in EARIS, by indicating the Mission's positive attitude toward the regime at a time of growing mutual antagonism at the higher levels. For example, the Report stated that:

"The administration of EARIS no doubt will continue to move along under the vigorous leadership of the Egyptian Administrator. He will no doubt continue his efforts to perfect his organization and operations, and will seek consultation of specific management problems which develop..."

"Successful completion of the EARIS program in all of its aspects within the time schedule is a big undertaking. The Administrator of EARIS and his staff have made tremendous progress since EARIS has been in existence..."

"The dynamic Egyptian Administrator has assumed full executive responsibility under the policies laid down by the Co-Directors."

While the general tenor of the Report was "upbeat" and optimistic, its authors acknowledged that "the year has not been an easy one." They cited:

"the normal difficulties of solving the problems of the expanding EARIS organization and operations were aggravated by the overall situation in Egypt and a lack of understanding between US Technicians and the EARIS Administrator with respect to his acceptance of full operating responsibilities."

However, this "negative tendency" was reportedly remedied, resulting in improved morale and more effective working relationships. Although the original program agreements suggested jointness of operations and planning, this never materialized. Meanwhile, it was possible to reduce the US technical staff by about 50%, and to transform the EARIS organization into a working team. The authors of the Report stressed the achievement of tangible results in the management field, which they felt left a deeper and more lasting impression than improved technique. They optimistically reported "the feeling of increased organizational power" and a growing realization throughout EARIS of the function of management as "a working partner of the technician, not his master nor his servant." In passing, the Report noted "one area of real frustration" related to the failure of the National Production Council to approve a set of regulations on operating procedures, functions and responsibilities within EARIS. In retrospect, it is clear that the Council's failure to act was a direct consequence of US-Egyptian impasse during 1956.

## EARIS Phase II In Retrospect

The Suez War of 1956 brought to an abrupt halt US participation in EARIS activities. In his letter dated October 19, 1956, Admiral Stevens notified EARIS Co-Director Hussein Fahmy the indefinite suspension of all USOM/E activities effective November 1, 1956. In the wake of the precipitous departure of the US Mission, EARIS Division Chief Roscoe Bell found the moment propitious to perform two program evaluations between November 1956 and February 1957. These evaluations took place during the evacuation of the USOM/E staff first in Naples and then in Washington, D.C. These evaluations, which were made available by Mr. Bell from his personal files, were far more objective than those performed earlier in the more constrained Egyptian context. In other words, now that the EARIS program had been interrupted, the US staff did not have to worry about writing an evaluation to impress their Egyptian counterparts. On the basis of these evaluations and recent interviews a more comprehensive and objective picture of EARIS can be pieced together.

1. The Staff's Perception of Egypt--Roscoe Bell and his men witnessed the confluence of a complex set of factors and events which shaped their perceptions of Egyptian reality. These included the powerful force of Egyptian nationalism directed at the lingering British presence, the reformist idealism of the military elite around Nasser, and the US determination to "woo Egypt" at practically any cost. They noted the pervasive Egyptian "phobia" of avoiding any outside domination or direction, and the tendency to reject the "substitution of US domination for British domination." All too frequently, US and British interests were linked in the Egyptian mind into one single Western interest--a perception that was detrimental to EARIS operations.

2. The Staff's View of Egyptian Counterparts--The foregoing macro-level factors were instrumental in generating specific problems within EARIS. The collective critical judgements of Roscoe Bell's staff, included the following points:

- a) In view of the US over-anxiety to woo Egypt, certain US officials readily acceded to Egyptian requests; within EARIS this led to Admiral Stevens' ignoring of the technical judgements of US and Egyptian technicians when these were in disagreement with the Egyptian Administrator.
- b) Despite the high level of training of Egyptian specialists, these young men had exceedingly limited experience in their field of work. Regardless of their limited experience, it was almost impossible for them to accept US advice due to their extreme nationalism. The importance of job security, combined with nationalism and feelings of loyalty to the regime, prompted these young Egyptians to emulate RCC attitudes in their dealings with US personnel, even though privately they might have been pro-American.
- c) There was a dire need for stronger co-direction of EARIS. Political and personal factors prevented effective co-direction. There was persistent ignoring of the technical judgements of the staff, who were often subjected to "insults and misinterpretations" day after day.

- d) The failure of the Mission Director to provide "good leadership" and support for US personnel, resulted in low morale and frustration, to the extent that of more than twenty staff members, only four elected to return to the Mission; and eight technicians did not serve for their full term.
- e) Virtually all the EARIS staff, past and present, felt their tenure in Egypt "professionally unproductive" despite the conviction that their personal impact on the Egyptians gained "respect and lasting friendship for the US."
- f) The Director's unreceptive attitude toward Roscoe Bell's recommendations, and his reluctance to support the staff, convinced them that EARIS "was doomed to failure" and prompted them to consider resigning en masse.
3. Self-View of the Staff
- a) Despite their careful selection and previous foreign experience, not all the US staff were perfectly adapted to their jobs in EARIS. The orientation of US employees in Egyptian culture, history, and developing good relations with Egyptians, needed "a much more serious effort" than provided by the Mission. However, the staff was "by and large, an excellent group of men" in terms of qualifications and dedication to the job. With few exceptions, the men enjoyed their personal associations with Egypt and its people.
- b) The factors that motivated the staff to stay on the job despite their manifest dissatisfaction included:
- Loyalty to the US--"we were going to stay in Egypt and we were going to take public and private insults smiling."
  - Professional pride and determination not to be a quitter
  - The hope that things would get better
  - Unwillingness to jeopardize their career with the International Cooperation Administration (ICA).

### Progress Report on Phase II

In the assessment of the US staff, the overall geographic and ethnographic configuration of EARIS in Fall 1956 is seen in the following table:

<u>Size</u>	<u>Total</u>	<u>Province</u>		
		<u>Buhera</u> (Abis)	<u>Fayoum</u> (Qoota)	(Kom Oshim)
Acres	34,500	25,000	6,000	3,500
Farms	7,000	5,000	1,200	700
People	40,000	30,000	7,200	4,200
Villages	11	8	2	1
Kind of Area		(Swamp)	(Desert)	(Desert)

On the basis of documents and recollections of the staff, at the time of the US evacuation, the accomplishments of EARIS were uneven and its progress behind schedule. After a slow beginning, by 1955 EARIS had achieved an organizational momentum of its own--a momentum aborted under the impact of political events. A critical review of its accomplishments between 1953-1956 may be summarized in the following progress report:

1. Administration/Funding--The administrative organs were staffed, but administrative regulations were not adopted by the Egyptians. The project agreements were concluded and signed by both governments except in community development. About 96% of the funds were committed in project agreements. Audits showed "superior fiscal management." The organization functioned "passably, generally according to Egyptian standards and methods." The American impact was minimal.

"We failed to teach the EARIS Administrator and staff good principles and practices of staff work and delegation of authority. The EARIS Administrator...dominated his staff and kept the whole group in fear of doing things unless directed by him."

2. Reclamation Works and Roads (Abis, Qoota, and Kom Oshim)--Reclamation works were designed for all three areas. Construction was virtually completed in Abis and Qoota and begun at Kom Oshim. Road building was almost completed at Abis but not begun in Qoota or Kom Oshim. The Egyptian experience in new project and road construction and canal lining by modern methods was "practically nil." The US impact was minimal because the Co-Directors did not insist on utilization of joint Egyptian-American engineering judgements.

3. Land Reclamation and Development (Abis, Qoota and Kom Oshim)--Soil and salinity surveys were made as a basis for selection of reclaimable land. Satisfactory progress was registered in most of the Abis project with 1,500 acres of fully reclaimed and 18,500 acres in various stages of reclamation. In Qoota a start was made on reclamation of 4,000 acres of which only 400 were cropped. In Kom Oshim only soil surveys were completed. The US impact was considerable in soil surveys and there was some impact in reclamation progress surveys. No significant influence was noted in agronomic practices (crop selection, fertilizers, irrigation, leveling), although some "slight impact" was registered in agricultural mechanization. Because of poor training of maintenance personnel, and reluctance to accept US advice, mechanization was not successful. Moreover, there was inadequate US staff and the Co-Directors did not require the Egyptians to use available US expertise. Egyptian engineers and agriculturalists needed field experience in large doses, coupled with intensive and continuing on-the-job training. A large number of interviewees repeatedly stated the persistent reluctance of highly trained Egyptian specialists to work in the field. They witnessed a strong tendency among the educated Egyptian staff to spend time in the office as if working in the field was below their newly acquired social status. Furthermore, the Egyptians would not accept US advice on the correct use

of machinery in land leveling and other operations. Crop failures were the result of poor land preparation and inexperienced field agronomists.

4. Village Construction--One village was built, a second under construction, and a third had been designed. Village No. 1 had been inhabited long enough to provide lessons for the planning of the remaining six villages in Abis and the two in Fayoum. The US impact was "slight" on construction of Village No. 1; there was some impact in redesign of the second and third villages. There was no noticeable impact on construction methods, although some ideas were "beginning to take root." Due to lack of time, effort, and training, the design did not adopt modular construction with concrete blocks. Nor was it possible to introduce any elements of "aided self-help" into housing construction, because the US Co-Director "didn't believe in it."

5. Community Development--This had been a priority item for the Americans in their desire to create "self-determined and self-governed communities of self-reliant farmers", who would not depend on the government to do the job for them. In terms of accomplishments, 88 families were resettled in Abis in March 1955. In their first crop year, ending Oct. 30, 1956, all the fallahin were reported to have met financial obligations from their crops. A cooperative was organized and "in full swing" with good participation by the fallahin Board of Directors. Elections were held for an agricultural advisory council, street shaykhs, and for a community council. About half of the settler families participated in the community education program. A clinic was operating, but had not gotten started "on a real public health program." Government workers in the village and in the central office were beginning "to get the feel of developing the people to do for themselves." The US impact was considerable in agricultural extension and the development of the community patterns of self-administration. There was some US influence on education and health. The failures in this area were "merely delays, and slow progress was made all through, but the progress is firm."

In conclusion, there had been considerable accomplishment, though this was felt to be "discouragingly slow in relation to the opportunities presented." The US contributions were very limited relative to what the US personnel had to offer. Failures resulted from the lack of direction and coordination by the Co-Directors through the Deputy system, as well as from the political and cultural factors outlined above. The quality of US technicians was reasonably good, although most of them lacked adequate preparation and historical/cultural/linguistic knowledge for working in Egypt.

It is evident that at the time of their precipitous departure, the US Mission Staff anticipated a return to Egypt "in the course of the next several months." In preparation for this short term eventuality, the EARIS Staff under Bell recommended a continuation of US involvement in EARIS because of:

- 1) Its unique character as a joint program with the potential for grass roots impact and replicability;
- 2) Its potential for setting up a grass roots community government of fallahin and bureaucrats;
- 3) The need to improve the success of EARIS which has been labeled as a "US project", in contrast to the Egyptian "pink-tinged" Liberation Province;

- 4) The substantial US investment in EARIS which can be made to pay-off in Egypt and elsewhere in the Middle East only when completed.

However, Bell emphasized that before its reactivation, firm agreement was needed on the following points:

- 1) An extension of time by at least two years beyond 1960.
- 2) Designation of working Deputy Co-Director with offices in EARIS.
- 3) Regular meetings of the Co-Directors to consider the technical basis for policy decisions and to give direction to the Egyptian Administrator.
- 4) Agreement by the Co-Directors to require that the Administrator use US technicians, especially in fields where there is a shortage of Egyptian practical experience. A total of seven or eight full-time and seven part-time US employees were considered necessary to restart the project.

By all indications, the conflict between the US Staff and Admiral Stevens was extremely serious and costly, in detracting from the overall American effort. With one or two exceptions, all the interviewees expressed their vehement disapproval of the Admiral's administrative and personal conduct, which ranged from his display of soldierly arrogance and martial authoritarianism, to his lack of administrative ability and insensitivity to the Egyptian environment. During the difficult years of 1955-56, the staff felt that Stevens was too accommodating to the Egyptians ostensibly for political reasons. As a consequence, he failed to provide leadership and support for his subordinates. To be sure, it was Roscoe Bell, one of Stevens' chief critics, who had originally pressed the Admiral to conform to the changing conditions of Egypt. However, by the time of the US evacuation, Stevens appears to have become too accommodating--a position which compromised the viability and functional utility of the US Mission. Thus, the staff rejected Stevens' "political" alibi that it was "necessary to agree with the Egyptians, to get along with them." Such was the situation on the eve of the Suez War which contrary to Bell's expectations, ushered a long period of American inactivity in EARIS, from Oct. 1956 to June 1959.

#### EARIS PHASE III: A NEW BEGINNING AND PHASING OUT (1959-65)

Despite President Eisenhower's important role in bringing about an Anglo-French-Israeli withdrawal from Egyptian territory, there were no immediate prospect of improvement in Egyptian-American relations. The ability of the Nasser government to sustain itself against the tripartite attack, brought the Egyptian President massive dividends in charismatic support across the Arab world. Under the banner of Pan-Arabism, Nasser lent his support to Algerian revolutionaries against France, the Palestinians against Israel and Jordan, as well as to other dissatisfied elements to overthrow Arab ruling elites who failed to conform to Egyptian unity schemes. These activities culminated in the founding of the United Arab Republic (UAR) by Egypt and Syria (February 1958), Palestinian disturbances in Jordan (1957-61), the Lebanese Civil War (1958), and the Iraqi

Revolution against the pro-British Hashemite Dynasty (June 1958).

In the American (and Soviet) perspective, the specter of a United Arab nation under Nasser constituted substantial cause for alarm; hence the promulgation of the Eisenhower Doctrine which pledged military support in case of Communist aggression. These considerations, coupled with Soviet economic and military support of Egypt, made any resumption of US economic aid to Nasser's government impossible. Nevertheless, it was in the American interest to provide a modicum of economic assistance, to keep alive the prospect of a US alternative to the growing Soviet role. It was also necessary for the United States to come to terms with the Egyptian revolutionary regime, which showed all the signs of internal strength and permanence.

The foregoing considerations, combined with the passing of Secretary Dulles, and Eisenhower's decision to assume a more active policy-making role, provided the backdrop for the incremental resumption of US aid to Egypt in April 1958. After 1959, the US aid program through PL 480 and other agreements was expanded substantially until 1964 when a new phase of US-Egyptian confrontation began as a prelude to the June 1967 War.

The USOM returned to Egypt in March 1959 and in May a team of three American technicians arrived to reactivate US participation in EARIS. Later they were joined by a fourth specialist. US funding for the year 1958-1959 was \$1,700,000. In July 1959, 351 families were resettled in Abis to bring its total to 1200 families. However, the US contribution for FY-1960 dropped to a mere \$119,400, while USOM contributions to non-EARIS programs were increased substantially. In December 1960 however, the US agreed to contribute an additional LE 1,462,000, simultaneously with the signing of a new agreement extending EARIS until December 1964. The 60/40 ratio was maintained throughout this period in Egyptian-American funding. In June 1963, a final grant of LE 1,200,000 was made to complete the EARIS project. It should be noted that the considerable increase in US economic aid during 1961-64 was a direct consequence of US-Egyptian rapprochement, forged under the Kennedy Administration.

It is virtually impossible to account for developments during the Egyptian stewardship of EARIS on the basis of available US documents and interviews. AID Director John Kean (1961-64), reported substantial progress by the Egyptians; after their return in 1959, the US Staff reported that in its absence 2394 families had been resettled at Abis and Qoota, for a grand total of 3715. By October 1962, AID/E reported considerable progress in the Abis and Qoota areas as follows:

1. In Abis, villages 1, 2, 3 and 4 were completed. In villages 5 and 6, 630 houses were under construction. In addition, 6,700 faddans were ready for distribution, 2,301 under leaching, and 6,800 under reclamation. However, the 1962 AID report placed the total for settled families in Abis and Qoota at 2,614 which was inconsistent with Vard Shephard's evaluation as cited above, unless, 1,100 families were resettled between October 1962 and April 1963. The usual family allotment was somewhat smaller than 5 faddans. On the other hand, the 1965 Mission Report gave the following statistics on accomplishments until Jan. 1, 1965:

	<u>Resettled Families</u>	<u>Reclaimed Faddans</u>	<u>Under Reclamation</u>	<u>Houses Under Construction</u>
ABIS	4,500	22,500	8,000	1,750
QOOTA	515	4,200	-	375
KOM OSHIM	-	3,200	-	600

2. The resettlement program was considered a success since only five families returned to their original villages, and applications to settle in EARIS villages exceeded the available farms by several thousand. Meanwhile, the Ministry of Agrarian Reform and Reclamation was adopting the EARIS model for use in other areas.

3. The production of cotton, wheat, barsim and corn on the early farms was well above the national average. Settlers in villages 1 and 2 owned 3 heads of cattle or buffalo on the average. Proximity to Alexandria had encouraged vegetable production at Abis, which increased by over 100% in acreage in the last two years. There was a decrease in cotton acreage due to the cost of insecticides and fertilizers. Meanwhile, dairy production increased 200%. Increases in barsim growing prompted plans to develop demonstration pit silos covered with mud. Settlers from 1959-62 had more than doubled the family income.

4. Village housing provided pure running water and toilet facilities in each house. However, there was much needed development in sanitary improvement. There had been a "lack of motivation" on the part of individuals to keep the villages free from dirt and animal manure. In villages 3, 4, 5 and 6, the animal shelters were moved away from housing units, to the outside edge of the village--a "big step" in changing traditional Egyptian village patterns. Similar requests had been made by villages 1 and 2.

5. The village communities included mosques, hospitals, and schools, all of which were well equipped. Under Egyptian law all farmers were required to belong to agricultural cooperatives in order to receive seeds, insecticides, and sell basic crops. These cooperatives constituted an important manifestation of community development. The schools reported an average attendance of over 70% in grades one to six. Also well attended were special night education classes for adults. Special training was offered to women in home economics.

### The New US Role in EARIS

The new American commitment to fund EARIS was not accompanied by the dispatch of a large staff, as was the case before 1956. In fact, the staff consisted of four full-time specialists--a total far below Roscoe Bell's recommendation of 1956. It consisted of: Prof. Paul Keim, University of California, Civil Engineer, Advisor to the Co-Directors; William Kailus, Mechanical Engineer, Supervision of repair workshops;

The small staff clearly manifested the reduced role of the USOM/E and EARIS in keeping with the lessons learned during the fifties. The areas of American involvement were specific and well defined, corresponding to areas of maximal Egyptian need. Under Kailus, three German mechanics were selected to operate the workshops at Abis, Qoota and Kom Oshim, in addition to carrying out in-service instruction in farm equipment repair. As a result, there were notable improvements in this area, although the lack of spare parts remained a serious problem.

Dr. Lackey was in charge of community development until August 1962; his work consisted of selecting the new settlers and relocating them in new communities. Lackey used the principle "of voluntary self selection" in his work, which was a unique approach to the problem. Therefore, there was no forced resettlement, and people were given the opportunity to return to their original homes. Lackey also instituted a system of self selection/election of leaders prior to resettlement, which was quite successful. These leaders were used by US-Egyptian officials to communicate information to the peasants, reduce the level of uncertainty and rumor and act as spokesmen for the peasants. Dr. Lackey reported excellent results with the visits of high level government officials to EARIS villages and the managerial work of Egyptian officials in the resettlement process. A strong feature of EARIS was the daily contact maintained by Egyptian professional personnel who actually lived in the villages. In settler selection, criteria were developed to promote redistribution of income and rectification of past abuses. Thus, the settlers were recruited from overpopulated regions of landless farm laborers who were also in good health, had good character, had at least one child of working age and no more than four children between 21-51. In the Abis case some fishermen and army veterans also received land. Among the professionals recruited, insufficient attention had been given to provide for full range of occupations. As a result there was no one to provide certain important farm and non-farm services. While EARIS provided vocational training, those who were trained could not find work in the villages, since there were no local industries. Also, little attention was given to future expansion, when the farmers' children grew up and wanted land of their own. Special care was exercised not to split clusters of families which had lived as neighbors before resettlement. In addition to five faddans of land, each settler was given a house, a pregnant gamoosa, food and a subsidy--all of which had a deterrent effect on the fallah's motivation to self-help.

Prof. Keim was instrumental in restarting EARIS in 1959. Under his direction the Housing and Reclamation Programs were greatly improved and speeded up during 1960 and 1961. Excellent contacts were established with the Ministry of Agriculture and Agrarian Reform, which assisted in implementing "many of the Egyptian obligations." At the end of Mr. Keim's tour, there was a slowdown in the implementation of new project work orders, due to the cabinet reorganization of August 1961, which created a separate and independent Ministry of Agrarian Reform and Land Reclamation. This Ministry assumed responsibility for EARIS operations. No replacement was made for Keim and none for Lackey after his departure in August 1962, which reduced the US staff to Kailus and Shephard. EARIS was phased out on December 31, 1964.

VI. OVERALL EVALUATION OF EARIS

## ACHIEVEMENTS

In retrospect, EARIS appears to have been an unprecedented undertaking in terms of its basic philosophy and comprehensiveness of goals. The overall tenor of the interviews indicated substantial agreement on the fundamental soundness of the EARIS concept along with some criticism regarding its implementation. Clearly, it was a good learning experience for both the Egyptians and the American participants. In the collective judgement of the US personnel, EARIS was "the right thing to do at the right time."

Any comprehensive assessment of EARIS, would necessitate a choice of criteria and standards of evaluation. From a short-term political perspective, clearly EARIS became a failure--it was stillborn--once Secretary Dulles decided against US participation in building the High Dam. However, by staying with EARIS until its completion, the American side demonstrated its faith in the basic philosophy of EARIS and determination to make it a success. Consequently, EARIS along with other AID projects, kept alive the viability of an American alternative to the Soviet Union from 1959 to 1973. As such, EARIS constituted a positive US accomplishment in Egyptian minds that set the stage for the reactivation of large-scale American assistance during the Sadat era. In this sense, it is possible to discern a long-term political benefit from the US role in EARIS.

In addition, EARIS produced certain important social and personal benefits for both the Egyptian and US personnel. Despite their disagreements within EARIS, most US participants reported longlasting friendships with their Egyptian counterparts. Incredibly, these friendly personal ties survived the political fluctuations in US-Egyptian relations. Despite their cultural naivete, the inherent openness of the Americans placed them in sharp contrast to the self-encapsulation of the Soviet advisors. As a result, the Egyptian response to the Americans was reported as being generally warm in terms of cordiality and hospitality.

Considered by itself, EARIS had become an ongoing concern by 1965. During the late sixties and seventies, three of the original US staff visited the EARIS villages and found thriving and healthy communities. It was felt that the Project was considered a success by both the Egyptian government and the fallahin settlers. There was less agreement among the American staff however, about the magnitude of the US advisory impact. It appears that the US influence contributed to the development of Egyptian long-term planning skills, application of systematic developmental procedures, and the adoption of a comprehensive approach to building EARIS. In addition the US staff had a positive impact on machine maintenance and repair, technical education, project design and the adoption of large-scale management procedures. Perhaps the most significant area of salutary influence was community development and resettlement. The field of community development had been a persistent American concern, despite the paucity of Egyptian interest. In this area, the US staff attempted to inculcate among Egyptian peasants and staff rudimentary democratic ideals and processes of self-governance. In their personal conduct and dealings with the

peasants, US personnel emphasized non-authoritarian and egalitarian modes of behavior with some success.

#### PROBLEM AREAS: A CRITICAL DIAGNOSIS

Political problems notwithstanding, there existed several major problem areas in EARIS which merit careful analysis in terms of their potential role in shaping future US-Egyptian social-economic-political relationships.

#### Clash Of Philosophies And Cultures

In view of their diverse historical experiences and cultural bearings, it was only natural that the Egyptians and Americans found themselves at odds regarding their approach to specific problems. From the outset one could discern substantial clashes in outlook, operational codes and social ideologies. At a time when the new Egyptian regime was interested in quick and spectacular results, the American staff was emphasizing broad-based, carefully planned and comprehensive rural development.

The clash of ideologies and modalities became most apparent in the US conception of EARIS, in sharp contrast with the Egyptian-planned Tahrir Province. In developmental terminology, Tahrir vs EARIS represented two distinct and divergent approaches--'modernization from the top' vs 'modernization from below'. In the American perception, the Tahrir province represented a clear example of 'modernization from the top', where the Egyptian government followed etatist-socialist principles by providing financing, organizational direction and technical cadres, and permitted only limited peasant participation. In sharp contrast, the American approach to EARIS emphasized valuntaristic, grass roots peasant participation in democratic village self-governance. Furthermore, EARIS provided a powerful inducement--the opportunity to own land and housing--which was lacking in the Tahrir experiment. Only in recent years Tahrir land was given to the peasants. Throughout their involvement in EARIS, the US staff reiterated its commitment to peasant individualism and the development of the human being and the community. It was significant that the US staff--from Hannum, Tannous to Roscoe Bell and Dr. Lackey, never wavered in this belief.

In time, most US personnel were successful in transcending their culture-shock and accommodating themselves to the Egyptian cultural milieu. Gradually, there was the realization that US-induced modernization would have to proceed incrementally, within the existing cultural setting. After all, the practice of elite-imposed modernization had been the dominant operational modality in Egypt since Muhammad Ali and the Pharaoes. Indeed, it was difficult, if not impossible for the Americans to sail against the tide of Egyptian history. Nor were they well equipped culturally for the tasks ahead. In this regard, the American EARIS contingent suffered from four handicaps:

1. The virtual lack of preparation in Egyptian culture, history and language prior to service in Egypt. It was to the credit of the American personnel that once in Egypt, they proceeded to acquaint themselves with the native culture, and some like A. B. Bonds acquired proficiency in Arabic.

2. The complete absence of American cultural anthropologists and area specialists from the USOM/E staff, with the notable exception of Afif Tannous who provided invaluable service. Consequently, US planning and policy-making became 'culturally blindfolded' to the detriment of the staff's overall effectiveness. For example, any competent area specialist would have councelled the US staff to pursue its policies of village participatory democracy within an Islamic framework, which would have reinforced their cultural and religious legitimacy. Many of those interviewed

strongly recommended the use of cultural anthropologists in addition to the employment of personnel who would combine technical skills with a modicum of area specialization.

3. The paucity of general technical preparation on the specifics of the EARIS Project prior to service in Egypt. The interviewees repeatedly complained about the lack of briefings in the US regarding the details of their assignments in EARIS. In view of the unique features of the EARIS Project, few of the Americans were ready for such a comprehensive undertaking in rural development. Moreover, it appears that some US personnel did not possess the type of expertise necessary for land reclamation projects in the Egyptian physical setting. Several staff members recognized their mistake in "pushing them toward large-scale mechanization" and the need for simpler machines. Furthermore, there were instances where some US personnel displayed patronizing attitudes toward the Egyptians, at a time when Nasser was desperately attempting to instill in his countrymen a sense of dignity--Karama. This type of behavior led to inter-personal conflicts, particularly when highly trained Egyptian personnel with advanced American degrees, were being advised by US personnel, some of which were less educated but more experienced.

4. The reluctance to utilize native expertise was an important self-criticism, which emerged in a latent manner from interviews. Specifically, in the areas of land reclamation and irrigation, the Egyptians had a wealth of historical experience, which appears to have been neglected by some US technicians.

### Organizational Deficiencies

The evidence clearly points to a plethora of organizational shortcomings with EARIS and USOM/E, which transcended the personal problems associated with Admiral Stevens' stewardship. Inherent factors of instability within the US staff included:

- 1) difficulties in the chain of command
- 2) insufficient staff support from Washington
- 3) failures in recruiting a sufficient number of qualified personnel
- 4) problems in staff coordination
- 5) high turnover rate of AID people which impeded program continuity

In more general terms, the staff did not possess an integrated policy framework; nor did it have an institutionalized mechanism of ongoing evaluation. With the exception of Hannum, Bonds, Lackey and Kean and a few others, the staff lacked social scientific and policy-relevant expertise, although they excelled in technical areas.

The foregoing shortcomings however, did not detract appreciably from the overall excellence of the EARIS and USOM/E staff. In terms of their educational training, professional expertise and character attributes, these were high caliber individuals, who projected the finest traditions of American magnanimity and generosity. The cultural and psychological problems they faced, had been present since time immemorial; nor did they have any control over the shortsighted policies of their hierarchs in Washington.

### Egyptian Deficiencies

There were several general problem areas on the Egyptian side as seen from the perspective of the American participants. These were:

1. The Egyptian tendency to procrastinate, which necessitated unlimited amounts of patience on the part of US personnel.
2. The reluctance of educated Egyptian personnel to work in the field, which they felt was below their dignity.
3. The Egyptian predilection for overstaffing. By June 30, 1962, EARIS had 1,538 employees on its payroll, in addition to temporary laborers and government personnel attached to EARIS from various ministries. The US staff found it difficult to reduce the size of the EARIS bureaucracy, in view of the Egyptian law that made it practically impossible to discharge employees. Regarding this practice, the American side could not appreciate The Egyptian government's political and economic reasons for guaranteeing a job to all college/university graduates.
4. The reluctance of Egyptian administrators to encourage American-conceived community development projects.
 

Indeed, one aspect of the Tahrir project which brought American criticism, was precisely the lack of Egyptian concern for community development. In pressing for community development along democratic lines, the American staff manifested some degree of insensitivity to the ideological predispositions of the Nasserite regime, which emphasized etatist collectivism. Hence, the government's lack of interest in community development.
5. The inclination on the part of some Egyptians to disregard American advice on technical and managerial matters.
6. The frequent failure of the Egyptian government to provide counter-part technical personnel and meet funding deadlines.

### COST-BENEFIT ANALYSIS

Without any exception, the American staff considered EARIS a success; some called it "a monumental success." In the judgement of this evaluator, the achievements of EARIS were considerable, despite the political and interpersonal difficulties which surrounded its evolution. A more definitive judgement would have to await the results of extensive field studies. Meanwhile, the question that remains to be answered from both American and Egyptian perspectives is: success at what price?

The search for an answer requires that the EARIS Project is considered in terms of cost-benefit analysis--a technique which places primary focus on financial criteria rather than on social criteria. The fundamental question concerns the total cost of EARIS in terms of capital invested by both governments.

According to calculations based on the documentary material, the total cost of EARIS by late 1964 had reached \$42,500,000--a figure slightly above that reported by the US Mission. This sum did not include the salaries and allowances of US and Egyptian personnel attached to EARIS, who were paid by their respective governments. The total cost of the average EARIS individual unit in 1964 was reported as \$7,000, including reclamation, canals, drains, roads, mosques, schools, hospitals, buildings and streets.

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\* The official exchange rate between 1953 and 1964 decreased from about \$3 per LE, to \$2.4 per LE; these rates were used by the US staff in EARIS documents.

This represented a \$1,000 increase from estimates made by the US staff in January 1963, and a three-fold increase from 1955 estimates. AID documents reported that these expenditures were "considerably in excess" of the funds originally allocated. In any case, a per unit cost of \$7,000 represented a substantially large investment in the 1960's and even today by Egyptian standards. In order to analyze such an expenditure in cost-benefit terms, several methods may be employed:

1. Comparison of cost per unit with cost of similar projects in the same sector.
2. Comparison of cost per unit to value of rent as set by the Agrarian Reform Laws.
3. Comparison of rate of return on investment in land reclamation, with investment in other sectors of production e.g., transportation, industry, tourism.

According to Ministry of Treasury standards, as set by Dr. Abd al-Mun'im al-Qaysuni during the early sixties, the EARIS investment of \$1,400 per faddan would be considered too high a cost for land reclamation and land development. In fact, the acceptable Egyptian figure was less than half the EARIS investment of \$1,400, or \$670.

In calculating cost of land in the Egyptian setting of 1953-64, it should be noted that under the Agrarian Reform laws, rent could not exceed seven times the value of taxes, and the value of the faddan could not exceed ten times the value of rent. On this basis, the value of the best acreage would at most be LE 240 as compared with @ LE 600/650 for per unit cost of EARIS acreage.

In calculating the total costs incurred by the Egyptian government, the cost of financing needs to be considered. It had been originally decided to charge the peasant 3% compound interest on roughly \$2,700, the rest of the cost being born by EARIS. It has been reported that the Egyptian government eventually stopped insisting on repayment of the loan due to the peasants' inability to repay the mortgage despite the extension of the payment period from 33 ½ to 40 years. The Egyptian government would loose even if payments were forthcoming, since it was borrowing on the open market at the rate of 8% or 9% to fund its 60% portion of EARIS. As a regime committed to massive expenditures for the High Dam, heavy industry, and large-scale defense, it could not afford the luxury of continuing to subsidize the well-being of a small sector of its peasantry. Hence, the progressive diminution of the regime's interest in EARIS type high cost projects and its concomitant reluctance to approve expensive 'fringe' items such as community development. If this analysis is correct, then, despite Egyptian plans and promises to replicate EARIS, much comprehensive emulation may not have taken place. Instead, it is plausible that any replication of EARIS was done on a selective basis, where only some features of the EARIS experiment were used elsewhere.

#### A FUTURE EARIS?

Is it desirable to have EARIS type projects in the foreseeable future? The answer would be in the affirmative in terms of the social benefits that EARIS brought to thousands of Egyptian peasants, by providing them with

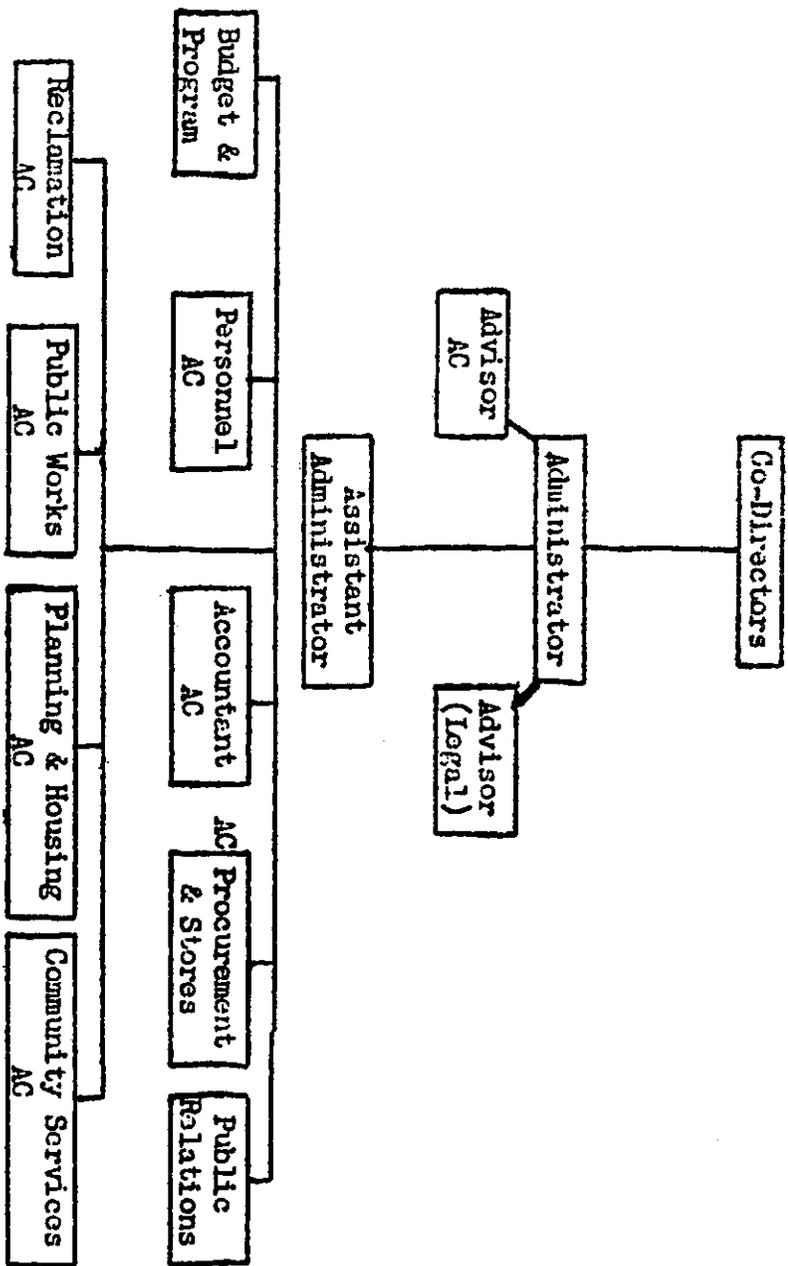
housing, income and other amenities. However, the high cost factor, compounded by rising inflation rates, will probably make the replication of EARIS economically prohibitive.

The opinions expressed in interviews with the American participants ranged from recommendations to replicate EARIS, to strong reservations about the future of land reclamation in Egypt. Suggestions included: changing cropping patterns, substituting exportable fruits and vegetables for cotton, and concentrating AID funds on developing light industries and small businesses, which would constitute a return to the original American philosophy of self-help. In the opinion of the evaluator, it is possible to relieve urban congestion to some degree by establishing small industry-based settlements in suitable desert locations, around which small-scale land reclamation might be possible. Such mating of small industry and small farming had been planned for EARIS villages, but not implemented.

Regardless of its trials and tribulations, EARIS remains an enduring landmark of Egyptian-American cooperation. For most of its American co-creators, EARIS is but a memory of a generally rewarding experience. But for the fallah settler, EARIS is a living reality; only he and his children can be the ultimate judges of its success.

Tontaliyo EAPIS Organization  
1953

ANNEX 1



American Collaborators = AC

## ANNEX 2

ESTIMATED DEVELOPMENT COSTS - ABIS AREA OF BUHEIRA PROVINCE

	<u>1953-54</u>	<u>1954-55</u> <u>1,120 Feds.</u>	<u>1955-56</u>	<u>1956-57</u>	<u>1957-58</u> <u>4,480 Feds.</u>	<u>1958-59</u>	<u>1959-60</u> <u>14,400 Feds.</u>	<u>Total</u>
Reclamation and Development	\$892,000	\$1,1510.000	\$1,316,000	\$652,000	\$206,000	\$213,000	\$254,000	\$5,043,00
Area-wide Utilities	32,000	32,000	122,000	121,000	243,000	243,000	-	793,000
Community Physical Development	33,000	33,000	127,000	127,000	254,000	255,000	-	829,000
Housing	100,000	100,000	482,000	469,000	937,000	937,000	-	3,025,000
TOTAL	\$1,057,000	\$1,675,000	\$2,047,000	\$1,369,000	\$1,640,000	\$1,648,000	\$254,000	\$9,670,000

NOTE: Not included are costs for community organization activities, education, health and sanitation, and agriculture services. These require further study.

**APPENDIX E**

**The Financial Side of EARIS**

**Ahmed K. Eldahry**

## Financial Assessment of EARIS

Since land reclamation projects include the development of other sectors of the economy beside agricultural production, the outcome of these projects are both economic and social. The economic rewards of the project are usually easier to quantify than the social gains. The recent development of "non-market" economics has been salutary in indicating fruitful ways in which economic concepts can be used to analyze social gains and their influence on future policy choice. This will lead us to the conclusion that the money spent on an activity is of no significance unless considered in the context of complex inter-relations between ends and means that are best pursued through closer attention to the concepts of efficiency and economy.

The following analysis employs four methodologies to evaluate and analyze the economic impact of the EARIS project, namely: (1) average family income; (2) average annual yield per acre in each of the three communities of the EARIS project; (3) annual return on investment in the three EARIS localities; (4) cost-benefit analysis, through which the actual value of the project will be compared with its cost.

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Since formal population data are not available in order to calculate the average per capita income for the settlers of the three major communities of the EARIS project, a similar indicator for economic status which is the average family farming income will be employed. This measure does not include other family income generated from work outside the farm or trade, since an estimate of this income would not be reliable without a long and detailed interviewing process. Therefore, any income resulted from processing the farm products is not included. Only the value of the crops produced by the farm and the products of the animals living on that farm are included in calculating the average family farming income.

EARIS Project is located in three separate areas, Abis; Kom Osheim and Qoota. Abis, the largest of the three, is administratively subdivided into three districts, namely: (a) Main Abis; (b) El-Doshodi and (c) Abis Extension.

### 1. Main Abis:

Main Abis is the most successful areas of EARIS. The net cultivated area of 10,915 acres is divided in twelve co-operative of Abis Alexandria. The number of settlers in this district is 2857 (Table 1). The total annual value of the yield of this district is 4,944,062 LE (Table 3). The average annual yield per acre is 453 LE (4,944,062 / 10,915). The average family holdings in total district area is 4.2 acres (12,051-2857) and the average family holding in cultivated area is 3.8 acres (10915 -2857) acres. The average annual payment per acre is 32 LE. Settlers of this area received one head of livestock when they first moved in, now the total count of cows and buffalos is 14,539, an average of 5 heads per family. Small livestock (sheeps, goats) count over 4000 heads for this district (Table 6). Berseem is grown in 6999 acres in Main Abis to feed almost 18,500 large and small animals . Therefore,

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the yield of Berseem is not counted in agricultural production but in animal production. Main Abis is exempted from growing cotton, therefore the area of vegetables is the largest of all crops (5297 out of 10,915). The average value of the vegetable crop is 640 LE per acre as compared to 145 LE in corn or 95 LE in wheat and barley.

Average Family Income:

Average family farming gross income  
= 4,944,062 - 2857 = 1731 LE

Average annual payment per family  
4.2 x 32 = 135 LE

All cost of farming	<u>400</u>	- <u>535 LE</u>
Net income from farming		1196 LE
Net income from livestock <sup>1</sup>		<u>1096 LE</u>
Net annual family income		2292 LE

According to calculations based on the documentary material, the total cost of EARIS by late 1964 had reached 42,500,000 LE. The total cost of the average EARIS individual unit in 1964 was reported as \$7,000 (2917 LE at the ongoing rate of 2.4 in 1964) including reclamation and infrastructure costs.<sup>2</sup> This means that an average investment of 2917 LE per family generates a current annual income of 2292 LE. This would translate to an annual rate of 78.5% in a monetary sense.

In regard to the value of the land, the houses and other infrastructures, most of the project assets are worth between five and six fold the original construction cost.<sup>2</sup> The land adjacent to Alexandria Agricultural Road is worth 20,000 LE to 30,000 LE per acre, while the average price for the land off the agricultural road is 4000 LE per acre. This means that the land alone of this area is worth more than 42,000,000 LE and livestock 7 to 8 million Egyptian pounds.

<sup>1</sup> El-Hehyawy, Salah, Land Reclamation and cultivation of EARIS Project, a paper prepared May 1981, P. 13, presented to the Evaluation Team.

<sup>2</sup> Dekmejian Richard, "An Analytical History and Evaluation of the Egyptian American Rural Improvement Service" (1953 - 1965), (Order No. OTR-000-85-1026-00), April 1981, P. 32.

TABLE 1

Main Abis: Cooperatives, Agricultural  
Area & Settlers

Co-operative Name	Area (Acres)	Area of Villages	No. of Settlers
El Gamalia	1046	21	235
El-Cowatlia	852	57	189
El-Thania	1607	75	377
Felesteen	1026	59	255
El-Gazaer	1180	57	284
El-Soria	726	13	166
El-Yamania	775	37	178
26 Joli	999	84	210
Orabi	1309	49	288
El-Thawra	992	52	224
El-Naseria	374	69	114
El-Tameer	1165	70	337
TOTAL	12051	643	2857

Main Abis: Crop Rotation (Winter - Summer)

Co-operative Name	Cultivated Area in Feddan	Winter Crops						Summer Crops				
		Wheat	Rye	Berseem	Vegetables	Fruit	Sugar Cane	Rice	Maize	Vegetables	Sugar Cane	Fruit
El - Gamalia	899	100	50	595	150	4	-	240	413	240	-	6
El-Cowatlia	756	50	80	373	250	3	-	201	260	287	-	8
El-Mhanaia	1472	120	140	907	302	-	3	490	595	368	3	16
Felesteen	918	40	150	675	49	1	3	290	311	313	3	1
El-Gazair	1072	56	100	831	50	36	-	290	342	383	-	58
El-Soria	679	100	100	444	30	-	5	200	226	248	5	-
El-Yamania	697	50	80	459	98	2	8	150	160	377	8	2
26 Joli	885	184	80	426	161	20	14	180	364	282	14	45
Orabi	1203	117	150	720	150	31	35	70	658	407	35	33
El-Thawra	912	40	150	568	110	4	40	90	498	282	40	2
El-Naseria	352	-	50	195	100	7	-	111	81	148	-	12
El-Tameer	1069	40	100	806	100	1	-	300	349	412	-	8
TOTAL	10,915	897	1230	6999	1550	109	108	2612	4257	3747	108	191

TABLE 3

Main Abis DistrictAverage Yield Per Acre, Price  
& Total Value of Crop

Crop	Cultivated Area	Crop Unit	Average Yield Per Acre	Total Production In Units	Unit Price LE	Total Value of Crop LE
Wheat	897	Ardab	8.8	7893.6	10.000	78,936
Barley	1230	"	9.4	11562.0	8.00	92,496
Rice	2612	Ton	2.9	7574.8	75.00	56,8110
Maize	4332	Ardab	9.5	41154.0	15.00	617,310
Fruit	191	Ton	5	955	30.00	28,650
Vegetables	5297	Ton	8	42376	80.00	3,390,080
Sugar Cane	108	Ton	13	1404	120.00	168,480
<b>TOTAL</b>						<b>4,944,062</b>

Table 4Main Abis District:Actual Number of Houses, Administrative and Service  
Buildings in all the Villages of Abis District:

Settlers' Houses	2,874 <sup>1</sup>
Laborers' Houses	170
Two Story House for Government Employees	102
One Story House for Government Employees	42
A Health Unit	4
Club	4
School	5
Mosque	5
Agricultural Co-ops	12
Consumer Co-op	4
Hospital	1
Veternarian Unit	1
Store	53
Zawya (a small place for praying)	23

<sup>1</sup> The original number of settlers houses were 2374.

TABLE 5

Machinery and Equipment Owned  
by Abis Cooperatives

<u>Equipment</u>	<u>No.</u>	<u>Value LE</u>
Tractors	10	55,000
Diggers	6	39,000
Ploughs	6	780
Levelers	3	255
Small Canal Opener	1	85
Crop Thresher	1	250
Farm Trailer	2	800

MAIN ABIS: LIVESTOCK HOLDINGS (1981)

TABLE 5

Co-operative	Cows			Buffaloes			Sheep	Goats	Donkey	Camels
	M	F	Total	M	F	Total				
El-Thania	182	1110	1292	9	766	775	287	89	310	1
El-Gamalia	168	653	821	-	511	511	144	23	197	1
El-Cowatlia	118	392	510	11	342	453	150	91	176	-
26 Joli	158	449	607	-	562	562	75	-	222	1
El-Thawra	145	675	820	-	464	464	80	73	223	-
Orabi	171	620	791	1	528	529	49	24	276	-
Felesteen	218	680	898	42	408	450	-	11	145	1
El-Gazair	98	578	676	78	503	581	-	-	70	-
El-Soria	222	509	731	-	393	393	48	26	209	-
El-Yamania	94	415	509	-	405	405	59	7	191	-
El-Tameer	212	790	1002	1	485	486	97	72	331	1
El-Naseria	19	184	203	-	170	170	76	29	91	-
<b>TOTAL</b>	<b>1805</b>	<b>7055</b>	<b>8860</b>	<b>142</b>	<b>5537</b>	<b>5679</b>	<b>1065</b>	<b>445</b>	<b>2411</b>	<b>5</b>

B. E1 Deshodi:

The total area of E1-Deshodi district is 6000 acres distributed between 1674 settlers in five cooperatives. The average holdings in total land is 3.6 acres per settler. The net cultivated areas is 5,829 acres and the average holding is 3.48 acres. There is also 171 acres distributed among eleven college graduates. The total value of the yield in this district is LE 1,546,730 (Table 7). The average yield per acre is 265 LE and the average gross income per settler is LE 922 (3.4 x 265). Average total farming cost per settler is LE 245, and the net farming income is LE 677. There are 5,517 heads of cows and buffalos, 4865 sheep and goats, and 1720 donkies, mules and camels in this district (Table 8). The average per family holding of these animals is 3.3 heads of cows and buffalos compared to 5 heads in Main Abis.

Average Family Income:

Average Gross Family Income from Farming	922
Average Farming Cost Including Annual Payment	<u>-245</u>
Net Income From Farming	677
Income from Livestock <sup>1</sup>	<u>792</u>
Total Net Family Income	1469

E1 Deshodi district is not exempted from growing cotton like Main Abis. Cotton is cultivated on 1380 acres and average production is 3 kentars per acre, well below national average. This district was distributed in 1962 while Main Abis was distributed between 1955 to 1959. Therefore, the land is not as productive or as valuable. The average value of the land is estimated to be 2000 LE per acre. Based on 3.4 average holding, a settler's land only is worth 6,800 LE and the annual return on today's market price for his land is 21.5%. The original average investment was 2917 LE in 1964 (\$7000) for each settler in EARIS Project. Today's annual return on the original average cost is 50%. The value of livestock in this district is well over 3,000,000 LE.

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<sup>1</sup> Hehyawy, Salah

TABLE 7

Abis, El Dshodi: Cooperatives, Agricultural  
Area and Settlers

Area Distribution

Co-ops Name	Cultivated Area (acre)	Total Area	No. of Members
El Gomheria	1116*	1208	242
El Wehda	1118	1271	327
El Kawmei	1178	1298	307
El Galaa	1498	1685	464
El Borsaedia	1088	1189	334
TOTAL	<u>6000</u>	<u>6653</u>	<u>1674</u>

\* 171 acres were distributed among College Graduates and was deducted out of the Co-ops area.

TABLE 8

EL DESHODI: CROP ROTATION AND VALUE

Crop	Acres	Unit	Av. Product	Value		Total Crop Value
				Unit Price	Per Acre	
				LE	LE	LE
<u>Winter</u>						
Berseem (Short)	1,310	Ton	20		300	Value not included because it is counted for in livestock.
Berseem (All Season)	2,056	Ton	20		300	
Wheat	900	Ardab	6	10	110	90,000
Barley	500	Ardab	5	12	84	42,000
Beans	170	Ardab	5	15	75	12,750
Potatoes	523	Ton	4	80	320	167,360
Tomatoes	300	Ton	4	70	280	84,000
Green Peas	<u>70</u>	Ton	1.5		150	<u>10,500</u>
Sub Total	5,829					415,110
<u>Summer</u>						
Cotton	1,380	Kentar	3	50	150	207,000
Rice	260	Ton	3	75	225	58,500
Louf	480	1000	4000	100	400	192,000
Corn	2,856	Ardab	8	12	96	185,695
Tomatoes	280	Ton	7	70	490	137,200
Potatoes	475	Ton	5	100	500	237,500
Seed Millin	<u>98</u>	K.G.	200	.70	140	<u>13,720</u>
Sub Total	5,829					1,131,615
						<u><u>1,546,730</u></u>

Average yields per acre =  $1,546,730 \div 5,829 = \text{LE } 265$

TABLE 9EL-DOSHODI: LIVE STOCK HOLDINGS

Cooperative	Cattle		Sheep	Ovines	Goats	Donkeys	Camels
	Cows	Buffalos				& Horses	
El Gomharieh	440	292	260		400	250	4
El Weheda	742	378	320		345	300	5
El Kawmea	835	380	580		620	350	6
El Galaa	970	460	400		660	450	7
El Port Saidia	<u>700</u>	<u>320</u>	<u>600</u>		<u>680</u>	<u>342</u>	<u>6</u>
TOTAL	3689	1830	2160		2705	1692	28

TABLE 10E1 Deshodi District:Approximate Number of Population  
In the District

Main Villages & Sattelites	No. of Settlers & their Children	No. of Employees & Laborers	Other Trades
1. Fifth Village	3990	180	35
2. Sixth Village	7735	200	60
TOTAL	11725	380	95

### C. ABIS EXTENSION

The total area of this district is 6984 acres. The net cultivated area is 6313 acres distributed among 1684 settlers in six co-operatives. The average net cultivated area per family is 3.4 acres, and the total area is 4.1 acres. Since the berseem is usually consumed by the farmers animals, it is not counted for as yield.

According to the crop rotation (Table 11) followed by the farmers in this district, the yield and cost of farming are as shown in Table 11 and 12.

The total gross annual yield for the district is 3,249,141 LE (Table 11) and the average gross annual yield per acre is 514 LE. The average gross family farming income is 1747 LE (514 x 3.4). The farmers of this district have paid 100% of their debts to their co-operatives as a result of having good crops. Like Main Abis, this district is also exempted from growing cotton and settlers rely heavily on growing vegetables which is more profitable than traditional crops. The number of livestock in this district is 6421 large heads. An average of 3.8 heads of cows and buffalos per family. The average annual payment for the land is 15 LE per acre, and the average payment per family is 61.5 LE (14 x 15).

The average annual income per family is as follows:

Gross Farming income	514 x 3.4 =1747 LE	
Average Cost per family		
(TABLE 12) 180.6 x 3.4 =	-614	
Annual Payment	<u>- 61</u>	
		<u>675</u>
Net Farming income		1072
Livestock Net Income		<u>506</u>
Total Net Income		1578

TABLE 11

Abis Extension: Cooperatives and  
Cultivated Areas

<u>Co-ops Name</u>	<u>No. of Feddans</u>
E1 Roda <sup>1</sup>	1219
E1 Saada <sup>1</sup>	932
E1 Salam <sup>2</sup>	1210
E1 Tahrir <sup>2</sup>	1061
E1 Zahraa <sup>2</sup>	1010
E1 Etehad <sup>2</sup>	<u>863</u>
TOTAL	6297

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<sup>1</sup> Belong to the 7th Village

<sup>2</sup> Belong to the 8th and 9th Villages

Abis ExtensionCROP ROTATION (1980-1981)

Co-ops	Acres	Unit	Av. Production	Unit Price	Crop Value Per Acre	Total Crop Value
				LE	LE	LE
<u>WINTER</u>						
Barseem	1718					
Beans	1290	Ardab	8	20	160	206,400
Wheat <u>1/</u>	430	"	8	10	130	55,900
Potatos	1074	Ton	5	80	400	429,600
Barley <u>2/</u>	690	Ardab	10	8	130	89,700
Tomatos	611	Ton	5.5	70	385	235,235
Cabage	96	Ton			400	38,400
Other Vegetables	405	Ton			400	162,000
Subtotal	6313					1,217,235
<u>SUMMER:</u>						
Corn	1521	Ardab	8	12	96	164,016
Rice	1410	"	3	75	225	317,250
Potatos	1055	Ton	5	100	500	527,500
Tomatos	1426	"	7	70	490	698,740
Mellons	351	"			400	104,400
Other Vegetables	550	"			400	220,000
Subtotal	6813					2,031,906
Total	6313					3,249,141

Average gross annual yield per acre = 514 LE

1/ and 2/ : The yield includes 50 LE per acre for straws.

C. Abis ExtensionTable 13Crop Rotation 1980-1981  
Average Cost

Co-operative	Acres	Average Cost Per Acre	Total Cost
<u>WINTER</u>			
Barseem	1718	50	85,900
Beans	1290	35	45,150
Wheat	430	35	15,050
Potatos	1074	150	161,100
Barley	690	35	24,150
Tomatos	611	150	91,660
Cabage	96	130	12,480
Other Vegetables	405	135	54,675
Subtotal	6313		490,165
<u>SUMMER:</u>			
Corn	1521	30	45,630
Rice	1410	75	105,750
Potatos	1055	150	158,250
Tomatos	1426	150	213,900
Mellons	351	140	44,100
Other Vegetables	550	150	82,500
Subtotal	6813		650,130
Total	6313		1,140,295

Average Cost per acre is  $1,140,295 \div 6313 = 180.6$  LE

Average Cost per family  $180.6 \times 3.4 = 614$  LE.

C. Abis ExtensionTable 14Livestock

Cooperatives	Large Head of Livestock		Comments
	Male	Female	
1. El Roda	-	1223	
2. El Saada	-	743	
3. El Salam	-	789	
4. El Tahrir	-	955	
5. El Etehad	-	1667	
6. El Zahra	-	1044	
Total	-	6421	

Kom Osheim

Originally the total area of Kom Osheim was 3187 acres out of which the meat organization owns 475 acres and a military airport acquires 519 acres. Therefore, the actual total area of this district is 2293 acres which includes 563 acres for the villages, roads, and administrative buildings. The net cultivated area is 1730 acres divided between two villages, 1360 for the first and 400 for the second. The total number of current settlers is 494 (394 in the first and 100 in the second). Due to the lack of irrigation water available for the total area, especially in the summer, there is around 260 acres baren land in the winter and more than 700 acres in the summer. Almost half the cultivated area is out of production and the other half is poorly cultivated. The reason for the lack of water is the vast expansion in new land reclamation on the main irrigation canals and the illegal irrigation of this new lands beyond the capacity of the canals which has resulted in reducing the water available to this district. The number of animals on the land also declined and its productivity dimished. Sometimes, clean water is not available to water the animals especially in summer. Some settlers left the land either partially or totally and the majority of the rest depend on migrant labor to Cairo and other cities. The crop rotation in the winter and summer and the estimated revenues are in Table No. 15.

<u>Net Family Income:</u>		<u>LE</u>
From Farming	372-145 =	227
Livestock		<u>120</u>
Net \$ Income		347

Kom OsheimCROP ROTATION

Crop	Ac.es	Unit	Average Production	Unit	Total	Acre
				Price	Value Per Acre	Crop Value
				<u>LE</u>	<u>LE</u>	<u>LE</u>
<u>Winter</u>						
Beans	150	Ardab	2	25	50	7,500
Berseem	340	Ton			50	17,000
Tomatoes	260	Ton			100	26,000
Wheat	430	Ardab	4	10	40	17,200
Ray	160	Ardab	4	7	28	4,480
Onions	40	Ton	4	35	140	5,600
Termos	40	Ardab	1	60	60	2,400
Fenugreek	50	Ardab	1	30	30	1,500
Vacant	<u>-</u>	-	-	-	-	<u>-</u>
Sub Total	1,470					81,680
<u>Summer</u>						
Corn (Summer)	450	Ardab	5	9	45	29,160
Peanuts	300	Ardab	5	20	100	30,000
Mellons	150	Ton			100	15,000
Maise (Corn)	<u>150</u>	Ardab	5	8	40	<u>6,000</u>
Sub Total	1,050					80,160
Total						161,840

Average rotation acre =  $1470 + 1050 = 2,520 \div 2 = 1,260$  acre

Average annual yield per acre =  $161,840 \div 1260 = 128$  LE

Qoota

The net cultivated area is 4500 acres in two villages of Qoota. Village #1, has 1060 acres for settlers, 194 acres rented and 443 acres for utilities and unused land (barren). Village #2 has 1850 acres for settlers and 953 acres utilities and unused land. This area also suffers from lack of irrigation water, and the barren land is expanding year after year since 1975. The settlers have not been able to pay their debts to the co-ops in the last five years due to the poor crops they have had. Settlers in Qoota have not been able to increase or maintain livestock due to the poor crops and the unreliable water resources. Irrigation canals were built to carry enough water for Qoota which lies at the tail end of the canal. Future agricultural expansion was not considered in the original planning for the irrigation facilities. When several thousands of acres was reclaimed on the canals ahead of Qoota the canals failed to supply both the new and the old land with its water requirement. Most of the newly reclaimed land on the canal is illegally watered. The Department of Irrigation is now in the process of increasing the amount of water by establishing a new pumping station to lift the drainage water to the irrigation canal in order to mix the water of the canal with the drainage water and increase the amount of water available for Qoota and other suffering areas. For Kom Osheim, there is no clear plans yet to encounter the water problem and supply the land around the canal with sufficient water for both the old and the newly reclaimed land. Nevertheless, the Irrigation Department have appointed patrol guards to prevent illegal irrigation and allocate some water for Kom Osheim to stop the area from further deterioration.

The average holding from livestock is barely one head per family. The average annual gross yield per acre is 123 LE (Table 16) and the average holding of net cultivated land is 3.2 acres (1,423 - 438). The average family income is as follows:

	LE	LE
Total Yield for 3.2 Acres		393
Cost of Farming	120	
Annual Land and House Payment	<u>20</u>	
Net Income from Farming		<u>140</u> 253
Net income from Livestock		<u>120</u>
Total Net Income		<u>383</u>

The reason that Qoota's family income is slightly higher than Kom Osheim is that Qoota grows 375 acres of onions which produces half its yield while Kom Osheim grows only 40 acres of onions. The actual value of the land in Qoota, according to local inhabitants is around 300 LE per acre. This value is the amount of money to be paid by a farmer per one acre to replace another farmer and continue to pay the rest of the installment to the co-ops. There are 20 families who deserted their land completely and 100 families left partially.

CROP ROTATION

Crop	Acres	Unit	Average Production	Unit Price	Total Value	Acre Crop Value
					Per Acre	
				<u>LE</u>	<u>LE</u>	<u>LE</u>
<u>Winter</u>						
Onion	375	Ton	6	42	252	94,500
Wheat	315	Ardab	6	12	72	22,680
Berseem	400				100	
Ray	200	Ardab	6		80	16,000
Fenugreek	<u>133</u>	Ardab		30	50	<u>6,650</u>
Sub Total	1,423					139,830
<u>Suggested Summer</u>						
Corn	558	Ardab	3	9	27	15,066
Mellon, _____	350	K.G.	.200	.50	100	35,000
Maise	<u>500</u>	Ardab	4	8	32	<u>16,000</u>
Sub Total	1,408					34,566
						<u><u>174,396</u></u>

Average rotation area =  $(1423 + 1408) \div 2 = 1415$  acre  
 Average annual yield per acre  $174,396 \div 1415 = 123$  LE

**CONCLUSION:**

Table 17 shows the diversity of success in the EARIS Project. In the five major districts of EARIS family income ranges from LE 2292 in Main Abis to LE 347 in Kom Osheim. Family farming income ranges from LE 1196 in Main Abis to the lowest of LE 227 in Kom Osheim. Livestock income is the highest in Main Abis because of the high number of livestock holdings per family, 5 heads compared to 0.9 heads in both Qoota and Kom Osheim. The three districts of Abis area are considered successful and continue to improve over time, while the two areas of Kom Osheim and Qoota are suffering and will continue to deteriorate unless the water shortage problem is taken care of. However, since the Abis Area constitutes 89% of the project's land area, EARIS can be considered relatively successful in attaining its economic objectives.

TABLE 17  
EARIS Aggregate Data

<u>District</u>	<u>Net Area</u>	<u>No. of Settlers</u>	<u>No. of Livestock</u>	<u>Total per family</u>	<u>Livestock Income</u>	<u>Income per Acre</u>	<u>Family Farming Net Income</u>	<u>Total Family Net Income</u>
1. <u>ABIS</u>						LE		
a. Main Abis	10,915	2,857	14,539	5	1,096	453	1,196	2,292
b. El Dshodi	5,829	1,674	5,517	3.3	792	265	697	1,469
c. Abis Extension	6,313	1,684	6,421	3.8	506	514	1,072	1,578
2. Kom Osheim	1,730	439	420	.9	120	128	227	347
3. Qoota	1,423	438	600	.9	120	123	253	383
	<u>26,210</u>	<u>7,092</u>	<u>27,497</u>					

**APPENDIX F**

**Implications of EARIS for New Lands Development**

**Robert Morrow**

## IMPLICATIONS OF EARIS FOR NEW LANDS DEVELOPMENT

Desert and lake land reclamation (new lands) is an important and controversial topic in Egypt. Increasing yields or lowering production costs on old lands offer only limited long run growth opportunities. On the other hand, it is difficult to justify investments in new land development economically with today's capital costs and value of agricultural raw materials produced. Most agricultural products are relatively low value and farmers can only produce crops twice a year, even with fully irrigated year-round cropping systems. Heavy capital investments are necessary up front. These considerations make good economic returns difficult. In addition, a period of several years' "gestation" is necessary before full production is reached, making positive returns to investments difficult although capital outlays may be recovered. It was not possible in the space of this evaluation to reconstruct project data on early capital costs, operation and maintenance costs and farm costs or to project returns. Hence no conclusions are possible on the likely internal rate of return or economic

Previous Page Blank . However, despite the lack of calculations on economic possible to reach some conclusions about the financial and their implications for further new lands development. These are drawn from (1) detailed cost and return studies carried out for field crops in Beheira province, which incorporate part of the Abis project (the balance of the project is contiguous); (2) gross revenues on vegetables (from cooperatives' records) with estimate of costs applied; and (3) settlers' reports of production. The yield, cost and return estimates for the desert sites are very rough, as the recall for the good years goes back many years. Precision is fortunately not critical for the generalizations made here. While it is obvious that the desert area is now at a very low state of productivity, the settlers are unanimous and adamant that the land was once very productive.

The costs and returns of farming operations are summarized in Tables 1, 2, and 3, attached. They reveal that:

1. The desert sites are operating at about one third capacity and are clearly not economic or financially profitable.
2. The desert sites were apparently financially viable at one time, covering all farm costs and yielding a return which might have covered some operational and maintenance costs of the irrigation system, had such charges been levied on farmers.
3. The lake land site is clearly financially viable at present and could return significant payment to capital costs if such charges were levied on farmers.
4. Taking all sites into consideration, the overall project is not likely to be economic because some 20% of total available farm land is not presently being farmed. Current analysis from several other studies show all assumptions regarding the amount of land in production, gestation periods,

crop yield, percent of land in high value crops, etc. must be stretched to the limit to make projects viable. With sunk capital costs and some land unused, returns will be significantly down. It is highly unlikely that the overall project is economic.

5. Mismanagement of the desert sites is the clear villain, affecting both the farmers' financial returns and the economics of the total project. This mismanagement is due to lack of water rights enforcement, not farm management or reclamation errors.

Egyptian farmers appear very adept at adjusting to changes in widely different farming situations. Common laborers and fishermen became good farmers and farmers who ordinarily farmed Delta quickly learned to farm desert when water was available. It should be noted that the desert farmers used traditional flood irrigation techniques but with gravity flow the norm in Fayoum Province. The Egyptian bureaucracy is seemingly much less flexible. It converted a gravity-fed irrigation system in Abis--which farmers liked--to a low lift system which is ineffective as a water control mechanism but which is "traditional" and liked by bureaucrats. There is no known reason why it couldn't have been effectively managed like the gravity flow system in general use in Fayoum.

If the successful Abis project, a delta-like farming operation, and the two desert sites evaluated were isolated examples, they would have no particular implications for national programs. However, they are not. The contrasting sites were, in fact, chosen for EARIS because they were typical of a large portion of the cultivable land in Egypt. The entire northern band of land in the Delta consists largely of swamp and lake land reclamation projects, broadly defined. These lands are well farmed in the traditional manner. If more of these sites can be located they offer good prospects for development.

Developing and farming desert soils is an altogether different matter. This author is familiar with the El Moulak, El Mandief, Mariut, Mechanized Farm, Eltaddy and Samalout sites. These desert reclamation sites are more or less in the same condition as Kom Osheim and Qoota. They were either developed and have gone backward or were never fully developed. Various studies estimate that about 60% of all land listed as reclaimed in the past three decades is being farmed and only about 40% of that covers direct out-of-pocket costs. No charges for water or repatriation of capital are made. Thus there are an estimated two to three hundred thousand acres in low production or totally unproductive. There is clearly an option to work on these lands rather than completely new ventures.

This is not to say that there have not been some successful reclamation projects, old projects such as the old section of South Tahir, Inshass and the strip of land being irrigated by the Ismalia canal. Over the past decades these areas have been developed with Delta-like farms and farming and irrigation techniques. The key to their success appears to be relatively easy access to irrigation water and acceptance of a very long gestation period in which to convert the desert areas into more or less traditional farming ventures.

Development problems have not been overcome where (a) more mechanical and energy intensive means of water management are to be used; (b) where water is a very scarce resource; (c) where different water application techniques are needed; and (d) where more rapid development is required. These situations exist in nearly all the new lands areas.

Given that there are both significant amounts of land involved and major management problems to overcome, it seems this evaluation (coupled with information from other findings) shows that the partially developed sites should be used to work out solutions to water use and other management problems and to see just what production and profit levels can be achieved. This would help people in a desperate situation, build on sunk costs, and provide valuable information for use in determining further investments.

There is considerable controversy on the role which economic analysis can or should play in decision-making on new or "old" new lands development and redevelopment. There are three conventional arguments:

1. Land development and farming are economic enterprises. Why should one invest in land development if it can't pass an economic test?
2. Land development is by definition a long term proposition. To subject it to a test wherein benefits and costs are discounted to present values discriminates against it as a long term investment.
3. The Social benefits or the need for land is so strong that economic analysis is not an appropriate test; i.e., land development should be treated without economic analysis as would "investments" in national defense, health or education.

There is some logic in all these arguments. What should be recognized is that while national defense, health and education are not, for all practical purposes, traded internationally, agricultural raw materials are. Alternative investments might generate the cash flow needed to purchase food and raw materials as well as fueling other development objectives.

If there are some unusually high social benefits attendant to farm land development -- "better" primary and secondary job benefits or virtues in decentralized job creation--they should be justified against alternative primary and secondary enterprise creation. But these are not economic issues.

The issue of using the concept of net present value, a variation of B/C or internal rate of return analysis, does not discriminate against long term investment. It merely points up the issue--high value outputs are needed to economically justify tying up a lot of capital up front.

In any event, good economic and financial analysis can be useful in determining the nature of the investment. It can illustrate the return on capital, or how much capital might need to be written off to achieve various

objectives. It can show what the price of agricultural commodities (and hence food prices) would have to be to make an investment equal to or better than alternative investments. Provided alternative data is available on the social welfare bill for the unemployed, good economic and financial data might even illustrate if land development might be a cost effective alternative in meeting various welfare objectives.

What is not needed here is the type of economic analysis so often associated with water development projects, in which assumptions are overly optimistic. Generally assumptions regarding initial capital costs, crop yields, actual amounts of farm land to be brought into production, time needed to bring land into full production, opportunity costs for labor, amounts of land in high value crops, etc. are all cast in a more optimistic light than that evidenced by the reality of the projects which were evaluated or by similar projects known to the evaluators.

TABLE 1

## ABIS: ESTIMATED NET REVENUE ON A 3 ACRE FARM

POSSIBLE CROP COMBINATIONS		ESTIMATED NET REVENUE <sup>1</sup>
Winter	Summer	
1 Acre Long Berseem	Rice	317
1 Acre Long Berseem	Corn	312
1 Acre Mixed	Horticultural crops	783 <sup>2</sup>
	TOTAL	1412
1 Acre Short Berseem	Cotton	124
1 Acre Wheat	Rice	98
1 Acre Mixed	Horticultural crops	783 <sup>2</sup>
	TOTAL	1005
1 Acre Short Berseem	Cotton	124
1 Acre Long Berseem	Rice	317
1 Acre Long Berseem	Corn	312
	TOTAL	753
1 Acre Wheat	Rice	98
1 Acre Wheat	Corn	93
1 Acre Short Berseem	Cotton	124
	TOTAL	315
1 Acre Long Berseem	Corn	312
2 Acres Long Berseem	Rice	634
	TOTAL	946

<sup>1</sup> Source: Kheda, Hassan; Ministry of Economy, Foreign Trade and Economic Cooperation Department (Beheira Province Costs and Returns to Various Rotations).

<sup>2</sup> Assume 40% of gross returns to various horticultural crops found in the area are net returns to the farm family. This is the ratio for most field crops. Since the value of horticultural crops is relatively high and the major additional input requirement over traditional crops is family labor the returns to family labor may be understated.

TABLE 2

## TYPICAL ANNUAL REVENUES FROM CROPS IN BEHEIRA PROVINCE

	Gross Revenue \$/ Acre	Net Revenues \$/ Acre
<u>Traditional Crops</u>		
Long Season Berseem	352	251
Short Season Berseem	175	76
Cotton	318	148
Rice	181	66
Wheat	146	32
Corn	169	61
<u>Annual Combinations</u>		
Long Berseem/Rice		317
Long Berseem/Corn		312
Wheat/Rice		98
Wheat/Corn		93
Short Berseem/Cotton		124
<u>Horticultural Crops<sup>1</sup></u>		
Seed Potatoes	1200	
Spring Tomatoes	1260	
Loofa (Sponge with berseem under- cropping)	1000	
Summer Tomatoes	1320	
Potatoes	792	
Green Peas 2 Crops	300	
Average Gross Revenue	\$978	
Estimated Average Net Revenue		\$783 <sup>2</sup>

<sup>1</sup> Source: Kheda, Hassan; Ministry of Economy, Foreign Trade and Economic Cooperation Department (Beheira Province Costs and Returns to Various Rotations).

<sup>2</sup> 978 x 2 Crops x Net Value Factor .4=\$783.

TABLE 3

QOOTA AND KOM OSHEIN:

ESTIMATED NET REVENUE ON  
AN AVERAGE 3 ACRE FARM

<u>1961-66</u>			<u>1981</u>		
<u>Crop Rotation</u>	<u>Acres</u>	<u>Yield</u>	<u>Crop Rotation</u>	<u>Acres</u>	<u>Yield</u>
<u>Winter:</u>			<u>Winter:</u>		
Short Berseem	1.0	2 Cuttings	44% barren, balance poorly irrigated		
Long Berseem	.5	4 Cuttings and seed crop	Long Berseem	1.0	2 Poor cuttings 1 Poor seed crop
Onions	.5	10 m.t.	Onions <sup>1</sup>	<u>.68</u>	4 m.t./acre=
Wheat	<u>1.0</u>	1.26 m.t.		1.68	2.27 m.t.
	3.0				
<u>Summer:</u>			<u>Summer:</u>		
Cotton	1.0	1.23 m.t.	81% of land barren, balance very poorly irrigated		
Corn	<u>2.0</u>	1.6 m.t.	Fodder (corn or Sorghum)	.57	very poor
	3.0				
<u>Estimated Net Returns</u>			<u>Estimated Net Returns</u>		
Berseem/Cotton	1.0 acre =	\$172	Onions	\$ 61	
Berseem/Corn	.5 acre =	\$156	Fodder	<u>\$121</u>	
Onions*/Corn	.5 acre =	\$155		<u>\$182</u>	
Wheat/Corn	1.0 acre =	<u>\$ 93</u>			
		\$575			

Source: Yields are a composite of farmers' and Agricultural Cooperative reports  
to the Impact Evaluation Survey, 1979 prices

1) Onions @ 1981 prices, 47 LE/M.T.

**APPENDIX G**

**The EARIS School**

**Mohey Khattab**

## The "EARIS School": Training and Experience

Except for the 50 training grants to U.S.A., EARIS plans for the development of its human resources fell short of providing organized training programs in Egypt. EARIS planners and administrators in the study sample did not believe in the viability of the training programs administered in universities and training institutions. Rather, they believed more in the "learn by doing" approach to develop the capabilities of EARIS personnel. This opinion was confirmed unanimously by the technical staff in the study sample. Qoota Superintendent, (1954-1957) Mr. A. Darwish commented on the issue by saying, "We started the Qoota project with a staff at almost zero level of experience in land reclamation operations. Agricultural laborers were trained on the heavy machineries and became very efficient in operating bulldozers, tractors, motorgraders, etc. Others were trained on the mechanics of the various operations of land reclamation and became capable of operating and maintaining any of the heavy machineries". Mr. B. Hafez, who was working as an agriculture engineer in Qoota in 1956, said, "When I first worked in Qoota, I was assigned to the workshop where I was trained on the preventive and periodical maintenance operations. I learned by actually lubricating tractors. Later I was assigned to the field, where I learned how to use land survey equipments, how to determine the efficiency of the land levelling machineries, etc."

However, personnel working in managerial positions at both the top and the middle levels did not benefit much from the "learn by doing" approach. Management training programs would have improved their capability in managing the various operations. This opinion was confirmed by Mr. A. Shawki and Mr. K. Reda.

Organized training actually started in EARIS in 1960. EARIS in collaboration with the International Cooperation Administration (I.C.A.) organized some 50 missions to U.S.A., for periods ranging between 6 and 18 months. The training programs were tailored to the specific needs of EARIS in the following fields of specialization:

1. Farm Mechanization
2. Mechanics of Construction Equipment
3. Irrigation and Drainage
4. Community Development
5. Rural Sociology
6. Agriculture

Some of EARIS delegates had the opportunity to join universities for one semester to audit specific courses in land reclamation operations in such diverse areas as land survey, irrigation, diesel engines, farm mechanics, etc.

These grants also included an organized program for visiting farms, land reclamation projects, soil conservation, irrigation systems, farm machinery manufacturers, and less developed communities (e.g. American Indians), etc. Each delegate's professional background, to some extent, determined the level of academic and practical training he had to attend.

EARIS delegates to U.S.A. unanimously benefited a great deal from the combination of theoretical and practical experiences, in addition to the printed materials they procured. They expressed their admiration of efficiency with which the training programs were organized. However, they wished to have had these grants earlier; preferably at the early stages of EARIS agreement, to have had more time for implementing the gained experiences in the projects. This opinion was not supported by Dr. R. Anwar, who said, "It would have certainly been more advantageous if the training had started earlier, but who would have guaranteed the delegates obligation to continue working for EARIS upon return to Egypt."

In addition to formal training, while joint funding for EARIS ended in 1963, the majority of the respondents continued to work in land reclamation. Eventually most of them were dispersed among Angola's reclamation projects, ranging between 50,000-120,000 feddans each, carrying with them the experience they gained while working for EARIS.

The following is a summary of the experiences gained by the sample respondents and transmitted to other local projects.

1. Dr. M. Azzouni, gained experience in planning and project management, and land reclamation/resettlement operations. Has been partially using his experience in his work as a consultant to several agricultural projects in Egypt and some Arab countries, and as a professor to the Faculty of Agriculture, Cairo University.
2. Dr. R. Anwar, gained experience in planning and project management, and land reclamation/resettlement operations. Has fully transmitted all of his experience to other local projects since he continued working for the General Organization for Utilization and Development of the Reclaimed Areas and later for the General Authority for Rehabilitation Projects and Agricultural Development.
3. Mr. A. Darwish, gained experience in planning project management, land reclamation operations in slopping desert areas and management of heavy machineries. Has fully transmitted all of his experience to other projects since he continued serving in the same sector until he became the Undersecretary of the Ministry of Land Reclamation. Currently, a consulting engineer for land development projects.
4. Mr. M. Fawzi, gained experience in cooperative systems, which was transmitted to other cooperative societies that were operating under his supervision. Currently, on retirement.
5. Mr. H. S. Barr, gained experience in land reclamation through dewatering and desalting of land, settlers selection, orientation and training. Has not had the opportunity to use most of his experience since he was transferred to the Agriculture Department in Beni Suef in 1965.

Currently, Advisor to the Minister of Agriculture, for land reform cooperatives.

6. Mr. K. Reda, gained experience in financial and personnel management. Has fully been using his experience since he continued working for the same sector until he became the Undersecretary of the Ministry of Land Reclamation for Administrative and Financial Affairs.

7. Mr. R. Marzouk, gained experience in project management, land resettlement, land reclamation in lakes and desert lands, and management of agriculture operations. Has fully been using his experience since he continued working for the same sector. Currently, Project Manager of 100,000 feddans - a land reclamation project in West Noubaria.

8. Mr. H. El Tahry, gained experience in desert land reclamation, and management of heavy equipment. Partially used his experience since he was assigned to administrative posts afterwards. Currently, on retirement.

9. M. S. Shawki, gained experience in land reclamation operations in lakes and desert lands, farm mechanization, land resettlement and project management. Has been fully using his experience since he continued working for the same sector. Currently, Director General of North of Tahrir Agricultural Co.

10. Mr. M.S. Mousa, gained experience in mechanics of heavy equipment and farm machineries, and management of spare parts. Has been using most of his experience. Currently, Director General of U.A.C.C.I. Co. for FIAT-ALLIS construction/earth moving equipments.

11. Dr. H. Bakr, gained experience in project layout, design and construction of irrigation and drainage systems, planning and designing of civil works for irrigation and drainage. Has been fully using his experience in his work as a consultant to several land development projects in Egypt, Syria, Iraq and as a professor in the Soil and Water Department, Faculty of Agriculture, Alexandria University. He is using Abis as a teaching material for his students.

12. Mr. M. A. Baset, gained experience in physical planning of rural settlements, design of buildings, construction supervision and managerial skills. Partially used his experience since he worked as a consulting engineer for some time. Currently, Head of Technical Appraisal Dept. Egyptian Credit Bank.

13. Ms. S. Bassiouni, gained experience in land resettlement operations and community development activities. Has been using most of her experience. Currently, Head of Research and Social Services, Ministry of Land Reclamation.

14. Ms. F. Mahmoud, gained experience in land resettlement operations and community development activities. Has been partially using her experience. Currently, Head of Training, Ministry of Land Reclamation.

15. Mr. E. Kheir, gained experience in land resettlement operations, how to deal with people, how to make decisions and how to operate under severe conditions. Partially used his experience as he got involved in social research. Currently, Head of Field Operations, DBSI a management and social consulting firm.

16. Mr. F. Naguib, gained experience in land surveying and levelling design of irrigation and drainage systems, and canal lining. Partially used his experience. Currently, Head of Civil Engineering Dept., Ministry of Land Reclamation.

17. Mr. R. Fahmy, gained experience in physical planning of settlements, design and construction of low-cost housing and utilization of building materials. Has been partially using his experience. Currently, a construction consulting engineer.

18. Mr. B. Hafez, gained experience in land reclamation operations, e.g., land surveying and levelling, soil analysis, heavy and farm machineries. Has been using most of his experience. Currently, Director General, Dept. of Agricultural Economic Studies, the General Authority for Rehabilitation Projects and Agricultural Development.

19. Mr. A. Darwish, gained experience in management of agricultural operations, land levelling and farm mechanization. Has been fully using his experience, since he continued serving in the same sector. Currently, Director General of the East of Delta Sector, the General Authority for the Rehabilitation Projects and Agricultural Development.

20. Mr. N. El-Komy, gained experience in land levelling operations, canal lining and civil works for irrigation and drainage. Has not used his experience since he was assigned to perform other civil engineering operations in the petroleum sector. Currently, Director of Civil Engineering Dept., The Egyptian General Organization for Petroleum.

22. Dr. M. Khattab, gained experience in land reclamation operations in desert areas, land cultivation activities and farm machineries. Has transmitted most of his experience to two other land reclamation projects in Anshas and South Tahrir. Currently, President of DBSI, a management/social consultancy firm.

23. Mr. H. Khalil, gained experience in farm mechanization, management and maintenance of heavy machineries and land cultivation operations. Has been using most of his experience. Currently, Commercial Director General, U.A.C.C.I. Co. for FIAT-ALLIS construction/earth moving equipments.

24. Mr. Y. Khalid, gained experience in land reclamation operations and management of agricultural activities. Has been using most of his experience. Currently cultivating his private farm in El Nahda project.

25. Mr. S.E. Hehyawy, gained experience in land reclamation in lakes and desert lands, and management of agricultural operations. Has been fully using his experience since he continued working for land reclamation projects. Currently, agricultural consultant to the International Center for Agricultural Development.

**APPENDIX H**

**Water Supply and Sanitation**

**Eugene McJunkin**

## WATER SUPPLY AND SANITATION

### Water Supply as Originally Designed and Constructed

All seven EARIS central villages observed in the field, and most satellite villages constructed contemporaneously, were provided with piped, treated, drinking water to each household. Each house was provided with one interior tap, generally a conventional brass faucet, located in the same small room as the latrine. Water from this tap was and is used for drinking, cooking, washing utensils, laundering, and perianal cleansing following defecation.

The sources of this water were large, existing water treatment plants in Alexandria, Abus Houma, and Fayoum. These plants serve villages in Alexandria, Beheira, and Fayoum governorates, respectively. When necessary, EARIS constructed or extended transmission mains to project villages. Mains were generally of steel, cast iron, or asbestos cement pipe with diameters ranging from 200 to 300 millimeters. Distribution system storage was

Previous Page Blank n Fayoum villages where two elevated concrete tanks d. These tanks were about 25 meters to the overflow height above ground and approximately 20 cubic meters in volume.

Most larger public buildings were constructed with multiple faucets, latrines, sinks, and in a few instances, showers. These buildings were generally clustered around a central plaza and included schools, health units (and small hospitals), mosques, agricultural cooperative centers, and some specialized government buildings.

Household water supplies were not and are not metered. Similarly for public uses. Apparently no metering of total water use by each village has been undertaken.\* Drinking water was (and is) essentially supplied free of charge. Apparently during the construction phase and during the early years until the mid 1960s, EARIS itself maintained water supplies and sanitation within the project areas. Thereafter operation and maintenance become the responsibility of the relevant governate.

No records are apparently extant on surveillance of drinking water quality, reliability of service, and adequacy of pressure and of quantity. However all anecdotal evidence indicates that EARIS service was outstanding by Egyptian standards, then and now.

### Excreta Removal as Originally Designed and Constructed

The basic technology used was pour-flush latrines utilizing porcelainized, squatting slabs. Flushing, originally, was by use of the nearby water faucet previously described. These slabs were used

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\* Some conflicting statements on this were made by a local official during field interviews.

in both private households and in public buildings. They are readily adaptable to flushing, using water carried from public standposts or from canals where household water connections are not provided or, if provided, service is intermittent or low-pressure.

Public buildings in larger villages were provided with piped sewerage leading from the latrines, sinks, and floor-drains to rudimentary concrete septic tanks with removable covers. These tanks drained to ditches, canals, or swamps.

Pipes from household latrines drain either into pipelines discharging to drainage canals or into "trenches." Trenches are a poor man's septic tank/cesspool, smaller than conventional septic tanks and often built with a porous (or built without a) bottom. Trenches may also drain into nearby ditches or canals. The EARIS villages experimented with separate barns and household stables with separate entrances. Today, however, traditional patterns of housing animals in the home have re-emerged. In some villages, the independent barns are in use as housing.

Animal dung and urine in houses and barns is frequently removed by capturing it in earth placed on the ground or floor for that purpose, removing the "used" earth to the fields, and replacing it with fresh earth. A large portion of livestock dung is collected, dried (typically on rooftops), and used as fuel. The absence of dung cakes and stalks on the houses in the Fayoum is indicative of poverty not of a modern standard of hygiene which was a goal of EARIS.

The principal maintenance requirements are keeping the sewer pipes from blocking and removing sludge deposits from septic tanks and trenches. These apparently have always been considered householder responsibilities for domestic systems. EARIS apparently emptied septic tanks at public buildings.

It should be noted that no organized solid waste collection system exists, or apparently, has ever existed in these villages.

Written records on the performances of the sanitation technology during EARIS were not available. Interviews with original settlers indicate that by their perception, these systems worked satisfactorily.

#### Current Status of Water Supply and Sanitation in EARIS villages

All EARIS villages today have inadequate water supply and sanitation, ranging from moderate problems in some delta villages to total lack of safe drinking water in some of the Fayoum villages during much of the year.

Local and regional population growth, increased industrialization, and increased leakage in transmission mains developed over 20 years ago. Delta villages have water supplies characterized by low pressures (especially during daytime hours), frequent service interruptions, and suspect water quality. Fayoum villages have problems similar in kind but more severe in degree. In the Fayoum, during much of the year much of the population is dependent on water taken directly from canals--often from canals several hours walk removed from the villages. These supplies undoubtedly transmit numerous diseases, particularly pediatric diarrhea, and promote transmission of schistosomiasis (bilharzia).

The low pressures during daylight hours have resulted in loss of water services to many public buildings. Their pour-flush latrines are also dependent on water availability. Hospitals and health units that lack water and sanitation, large schools without even one working faucet or latrine, even mosques that lack water for ritual use - all are commonplace.

In the worst areas, i.e., those with the poorest water service (and therefore the fewest working latrines), human fecal deposits are readily found in almost any area of the village offering a minimum of privacy.

The villages of Kom Osheim and Quta in Fayoum governments are the most depressing. In Quta, mothers dig seep holes in the bottom of irrigation canals in their search for water for their families during the dry season. Quta is at the very end of the transmission main from El Azab, near Fayoum City. Kom Osheim is closer to Fayoum City but also at the end of its transmission main. A military camp, established in 1967, intercepts water just short of the village. A new government geological station is planning to install suction pumps for its own use (these will lower water pressure in the village to levels which will eliminate use of the system during most of the day) even while it uses large leaks in the drinking water distribution system to irrigate its own gardens and trees. (Leaks which could readily be reduced with simple ingenuity).

The drop in water pressure has converted many houses from use of individual, in-house water service to use of new public standpost built at the lowest elevations of the villages.

#### Services in Other, Nearby Villages

EARIS villages generally enjoyed higher standards of water supply and sanitation services than its neighbors in "control" villages. Universal house connections and latrines are rare outside the EARIS areas. Water supply, especially in the Fayoum, is largely through public standposts.

It should be noted that the governorates are not discriminating against EARIS villages in regard to poor operation and maintenance. Operation and maintenance is poor in all the nearby villages. However, the physical locations of EARIS villages often places them at the end of the drinking water transmission mains, the worst location when supplies are short.

### Appropriateness of Technology

Apart from the issues of system maintenance and recurrent costs, the water supply technology adopted by EARIS was appropriate. Two questions merit further discussion. First, the use of house connections versus public standposts. The added cost for the installation of house connections was marginal and provided a level of service of both water supply and sanitation at least an order of magnitude better. In addition to perceived benefits of convenience, health benefits from water piped to the home generally are superior to those from central water points.

The second question is whether EARIS areas could have maintained control of their own drinking water destiny by constructing their own water treatment plants. Leaving aside comparative costs (which apparently were not reviewed by the project designers), the EARIS villages probably lacked the long-term institutional base and the assurance of sufficient funds to satisfactorily operate and maintain a water filtration plant using surface water. Ground water, although readily available, in the delta is brackish. Groundwater in the EARIS area of the Fayoum - if there is any at all - is at least 150 meters below the surface. Also, electrical service during the EARIS years was by petrol-driven generators, a problem probably more insurmountable than operating a water treatment-plant.

It should also be noted that these water supply systems built under EARIS would still operate satisfactorily with a modicum of rehabilitation and an adequate quantity of water.

If the water supply were adequate, the household sanitation scheme would continue to work. One question - by today's criteria - is the need for treatment of the effluvia from the sewer pipes. An aneroebic lagoon could meet minimum standards, destroy bilharzia eggs, and require minimal land - all at the cost of probable odor problems.

### Some Lessons

1. Failure to organize locally based maintenance components resulted in unnecessarily poor service.
2. The "American" villages seem handicapped in developing a rapport with the Egyptian government agencies.

3. Unaddressed issues of recurring costs refuse to be swept under the rug and come back to handicap beneficiaries.
4. Metering and leakage control could have probably extended the project effectiveness and life expectancy effectively.
5. Pour-flush latrines can work in rural Egypt.
6. On-site storage of household water is advisable.
7. Where water supply service is not provided or is inadequate, residents will inevitably take water from the irrigation canals even though it is invariably polluted.
8. When given the opportunity to choose between treated, but less convenient, water and piped water from canals or drains, villagers will opt for the cleaner water for drinking.

**APPENDIX I**

**Evaluation Methods**

**Pamela Johnson**

## Evaluation Methods

The evaluation of a project twenty eight years after the initial project agreement was signed, eighteen years after the end of bilateral funding is at least unusual, possibly unfair. From an economic point of view, development investments are generally written off after twenty years. From a practical point of view, more than one skeptic suggested that the first question to ask would be, "Is there anything left at all?" Certainly twenty years exceeds the life span of bureaucratic interest. Despite the common assertion that the real impacts of development projects cannot be seen for fifteen to twenty years, virtually a generation, evaluations are rarely scheduled after the end of a project.

As the subject of an Impact Evaluation, EARIS also represents a departure. It is both the oldest project in the Impact Evaluation series and the one with the longest period of time elapsed since ion. Consequently, the methods used to evaluate the to reconstruct as well as to evaluate. There were phases to the evaluation carried out in Egypt and the United States.

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### I. Archival review

A. An American contractor, a former librarian in USAID/Cairo, was contracted to review and cull archival material in A.I.D. files and to annotate references to the project in development and academic literature. She reviewed 60 cartons of project documents from AID's archives in Suitland, Maryland, selecting and copying more than 700 pages of documents for the use of the team. She also compiled a list of foreign assistance personnel associated with the project and of participant trainees. A limitation to this effort was the unevenness of the documentation. Project documents were quite complete from the early years, to 1956, but only minimal from the later period. For example, the team was never able to fully reconstruct the expenditures of this later period. The most useful documents turned out to be two project evaluations, one in 1957 and a second in 1963; early planning documents, from which the team constructed a hypothetical log frame, and project summaries compiled when the U.S. Mission left Egypt in 1956 at the time of the Suez Crisis and again in 1967. The very comprehensive reports by the Egyptian administrator were informative and useful. They would have been even more so had there been a complete series.

B. Photographic archives containing photographs of EARIS sites for public information purposes were also available. While the archives were incomplete (missing prints, negatives, dates and/or captions), the available photographs supplied a useful visual baseline for the evaluation. Copies of archival photographs were taken to the field by the team and although only a hort time was available for this

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activity, it was possible to identify certain areas and even some individuals. With a fulltime photographer as a member of the team, it would have been possible to rephotograph areas in at least a generalized sense to document physical and environmental changes.

## II. Oral History

Because of the time elapsed and the incompleteness of the written record, Professor Richard Dekmajian was asked to tape record interviews with foreign assistance personnel who had been associated with EARIS. Of 90 names identified in the first phase it was possible to locate and interview twenty-two. In addition, in preparing an analytic history of EARIS, Dekmajian drew on archival material and the personal records of some of the interviewees.

The interviews and the resulting report accomplished several objectives. Foremost, it supplemented, corrected and placed in context the written record. Formal project documents and even memoranda and notes of meetings fail to communicate the process of designing and implementing a development project. In particular, the interviewees were able to place the project in the context of a rapidly evolving and fluctuating political scene and describe how global events such as the Suez Crisis or the U.S. decision not to fund the Aswan dam affected the daily operations of foreign assistance.

Second, from the perspective of more than a decade, the interviewees identified problems in the implementation of the project and evaluation issues of which the team would not have been otherwise aware.

## III. Household Survey

On a contract from AID, two Egyptian consultants carried out interviews of Egyptian participants and conducted a household survey. Mohey and Hind Khattab had, as a young agricultural engineer and a social scientist, worked for EARIS. Although they had not visited the EARIS sites since the end of the project, they were familiar with many of the villagers and with a wide range of technical and historical details. They were able in a short period of time to collect a large quantity of data.

They carried out a household survey in approximately 50 households in each of the three EARIS areas. In each household, they administered questionnaires to the male head of household, his wife and one young member of the household to assess the current status and attitudes of the settlers and their descendants.

#### IV. Impact Evaluation

A field team visited the three EARIS field sites in May and June 1981: Dr. Pamela Johnson, team leader, is an anthropologist and in A.I.D.'s Near East Bureau; Dr. Ahmed El Dahry, a political economist from State University of New York at Binghamton; and Robert Morrow, an agricultural economist of the Agriculture Office, Near East Bureau. Dr. Eugene McJunkin, Water Supply Advisor in the Bureau for Science and Technology, joined the team for part of their field visits. The team was accompanied at various points in the field by Mohey and Hind Khattab, their assistants, representatives from the Ministry of Land Reclamation and U.S.A.I.D./Cairo staff members. In assessing the impact of the project, the team measured the project against, a combination of the following standards:

1. The project's goals (as expressed in project documentation).
2. The accomplishments of land reclamation projects elsewhere in Egypt (based on written reports and the team's direct experience).
3. The levels of productivity, land ownership and services on the old lands or levels for rural Egypt as a whole.
4. An internal comparison of impact within the project.

The team found that using these different standards for analysis tended to focus attention on different sets of issues. For example, focusing on project goals laid bare some fundamental assumptions which the planners had made. Differences between Egyptian and American goals, glossed over by rhetoric in the early years, became very real in the course of project implementation. As one of the American technical staff noted, "Community development "was most probably included in the early agreements at the insistence of the U.S." In the 1961 agreement, community development " as a theoretical concept or as an action program" was left out.

The internal comparison of sites was the most useful in the short period of time of this impact evaluation. It focused the team's attention on the process of development. Since the number of external variables was limited by confining assessment to internal variation, factors which contributed to the success or failure of project implementation were more readily identified.

Identifying some problems the team encountered in carrying out the field assessment may prove useful to future evaluation teams.

1. Collaboration of local researchers: The effectiveness of relying on the assistance of local researchers with their familiarity with local conditions, language and background can be enhanced by advance training in impact evaluation and by participation in the evaluation planning. One should be aware of pressures on local collaborators especially on politically sensitive evaluations.

2. Inadequacy of existing data. While the simple lack of data in the developing world is a common problem, the team found a further problem in gathering data. Where data existed, the categories of data often concealed as much as they revealed. As an example, in demography, in addition to an overall lack of census data, local data sources reflected the assumption that the project beneficiaries were settlers. Data on other indirect beneficiaries such as bureaucrats, tenants and other in-migrants were generally unavailable. By and large, all of the data readily available to this team assumed a static population of settlers. Changes in ownership patterns, in-migration or out-migration rates and inter-generational change were difficult to establish.
3. Changing jurisdictions: Over a couple of decades, substantial local administrative changes made it difficult even to reconstruct what happened. Several of the EARIS villagers have changed governorates. The ministerial apparatus has changed several times. With each change determining the comparability of census figures, budgetary information and other forms of data becomes more complex. Sorting the effects of such changes on the data is beyond a short assessment.

**APPENDIX J**

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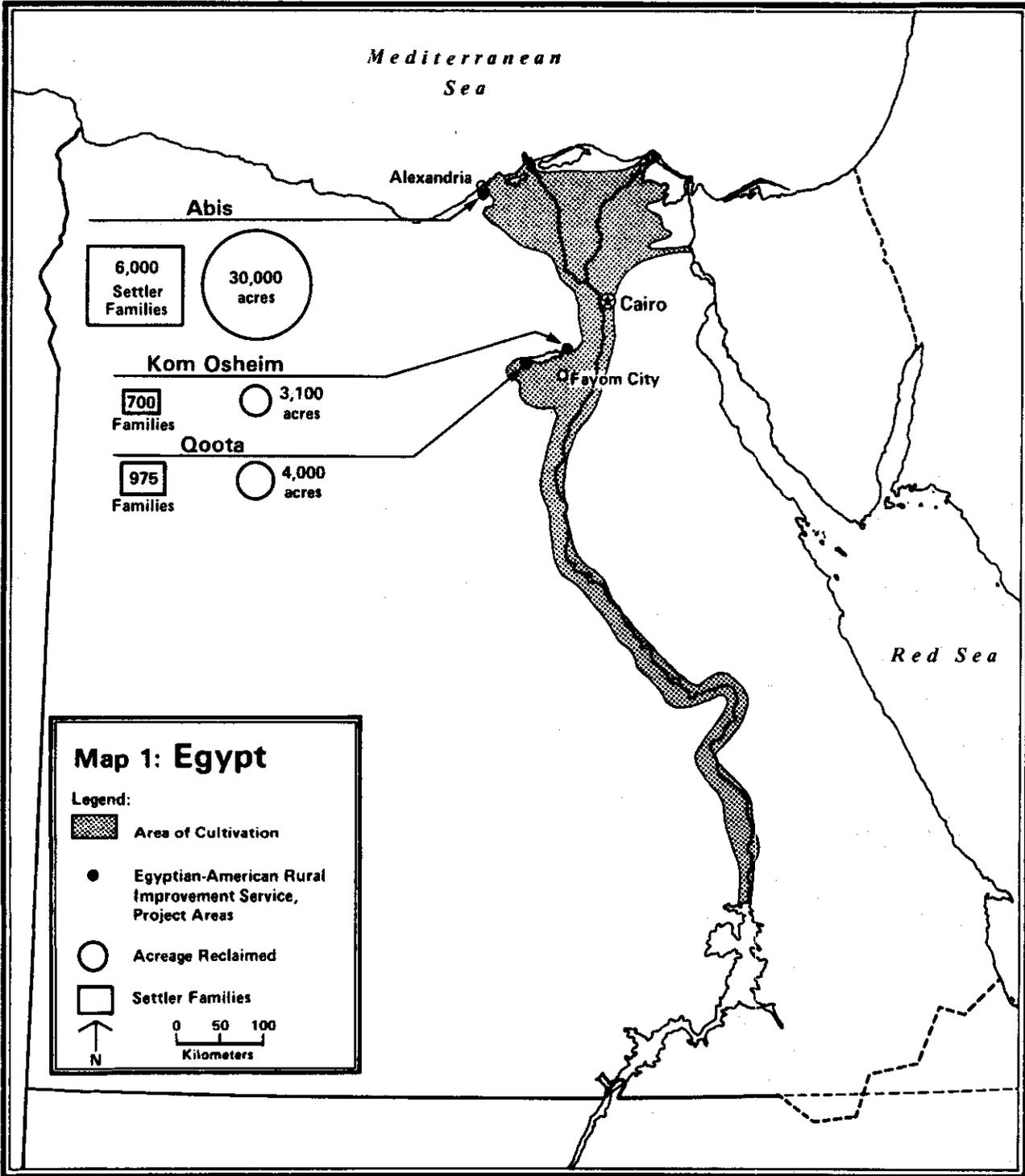
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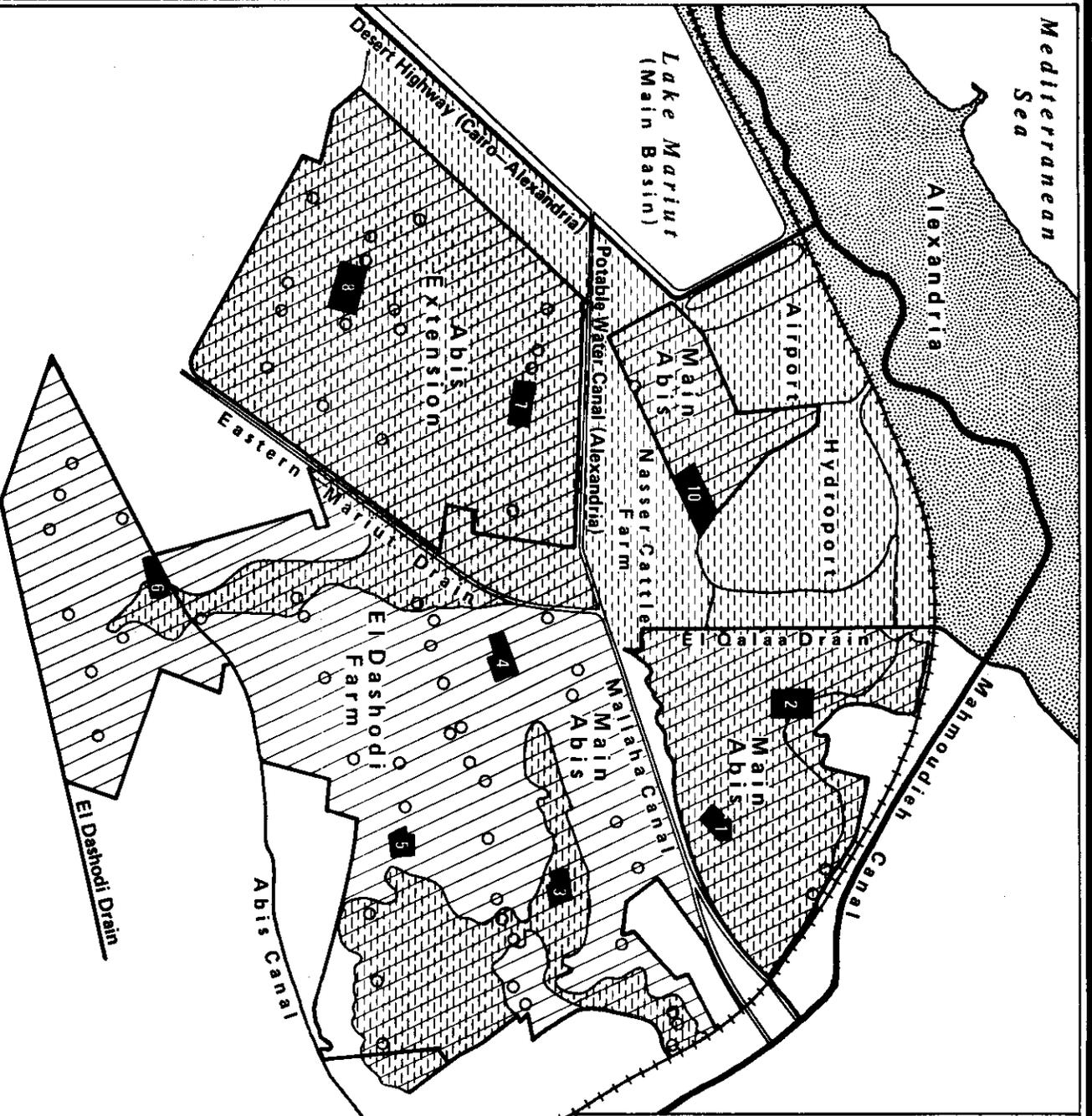


Mediterranean Sea

Alexandria

Lake Mariut (Main Basin)

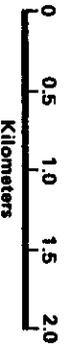
Desert Highway (Cairo-Alexandria)



**Map 2:**  
**Abis Project Area**

**Legend:**

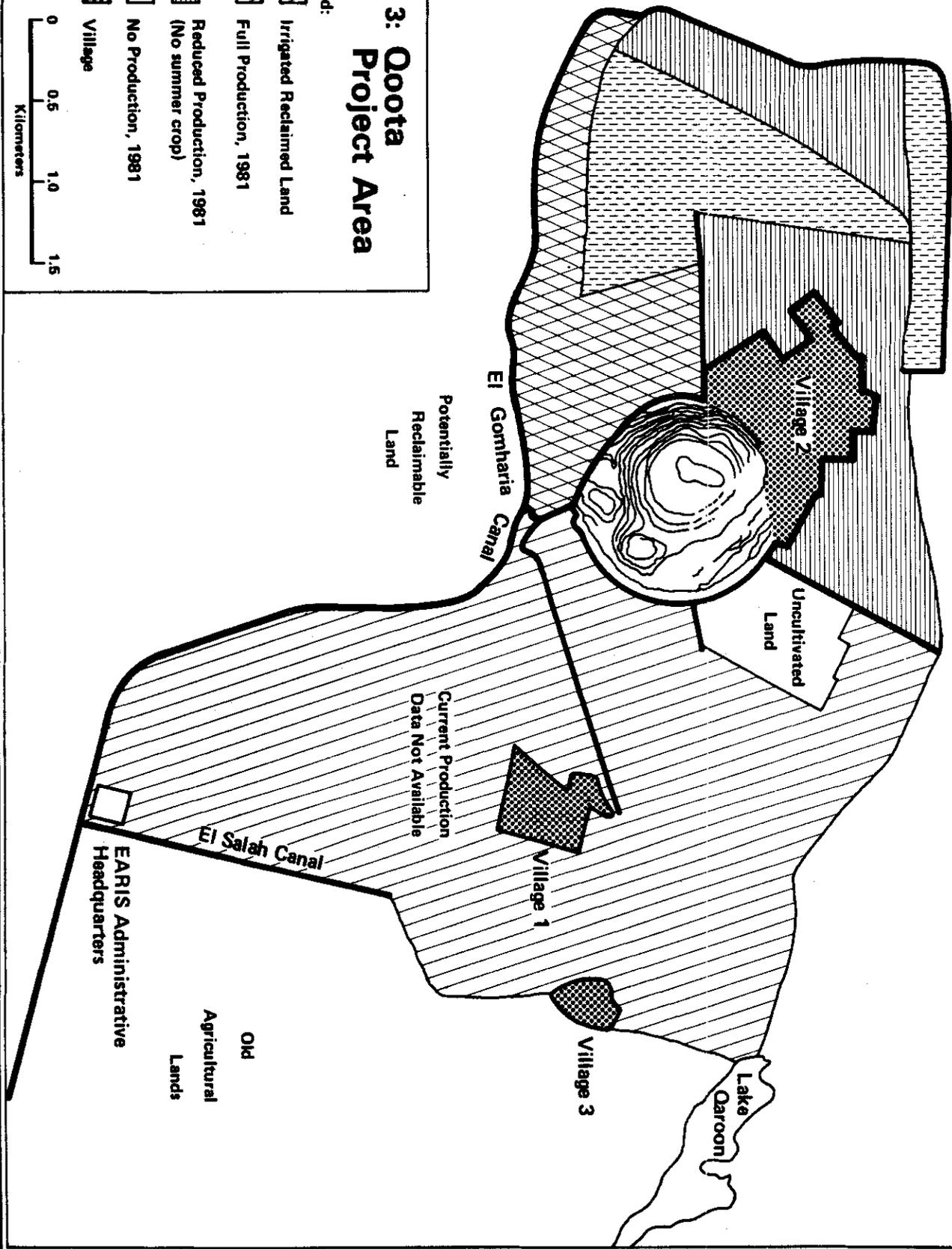
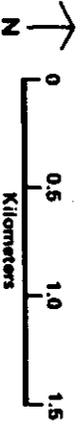
-  Areas Submerged Prior to Reclamation
-  Reclaimed Irrigated Land
-  Urban Area (1977)
-  Villages Built by EARIS
-  Hamlets Built by EARIS
-  Railroad

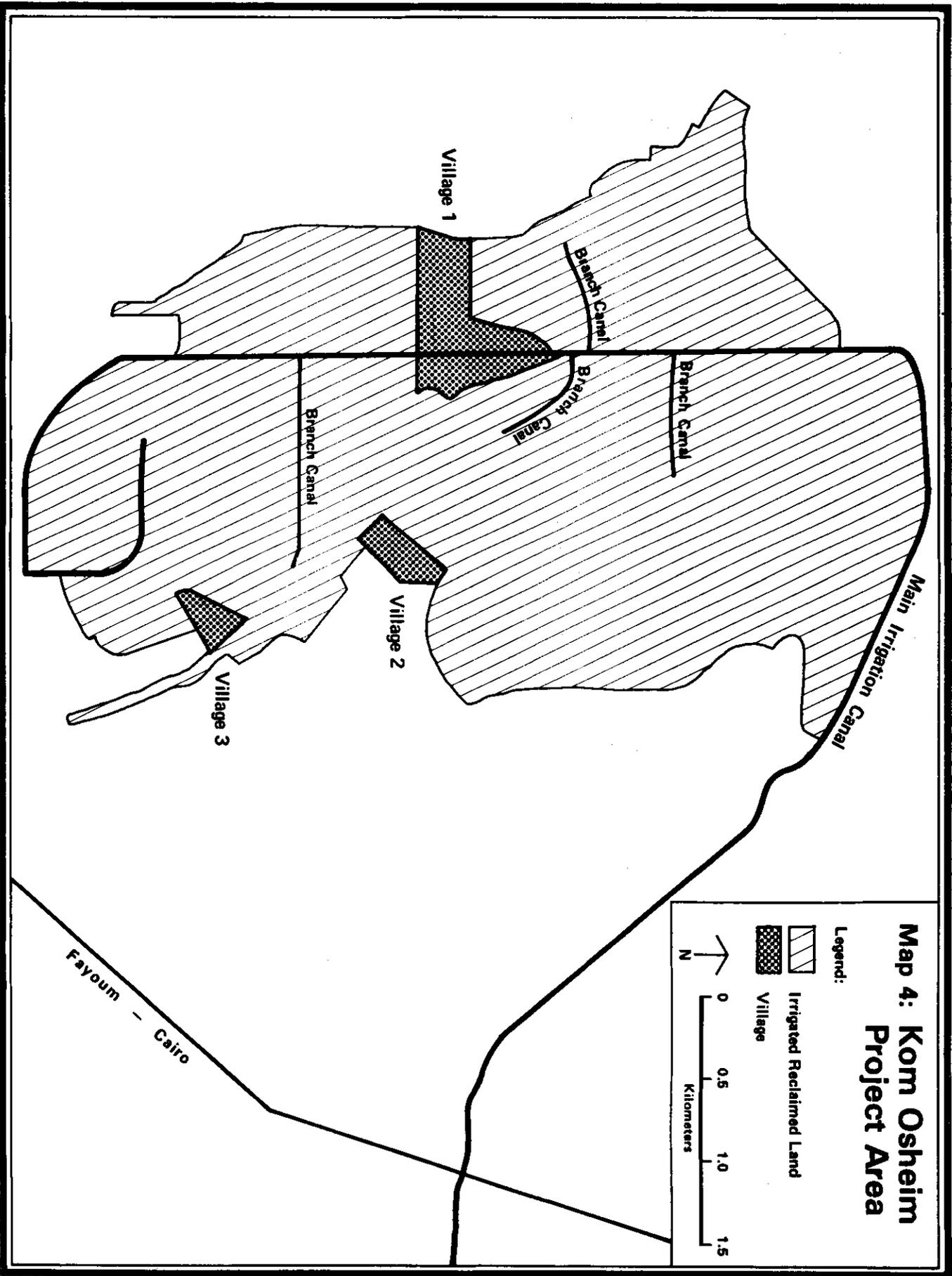


# Map 3: Ooota Project Area

Legend:

-  Irrigated Reclaimed Land
-  Full Production, 1981
-  Reduced Production, 1981 (No summer crop)
-  No Production, 1981
-  Village

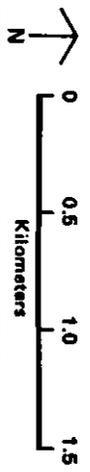


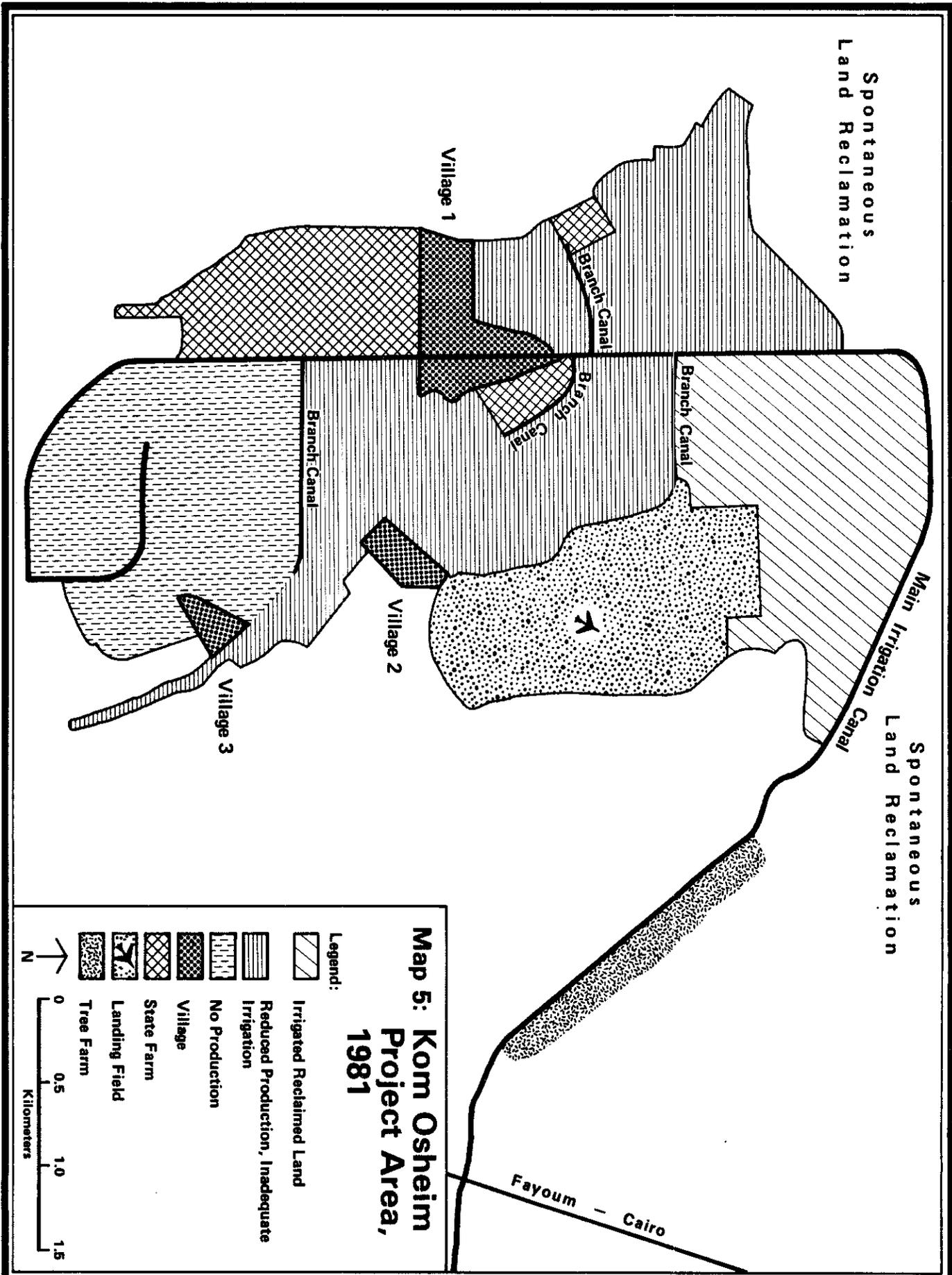


**Map 4: Kom Osheim Project Area**

Legend:

-  Irrigated Reclaimed Land
-  Village





Spontaneous  
Land Reclamation

Spontaneous  
Land Reclamation

Village 1

Village 2

Village 3

Branch Canal

Branch Canal

Branch Canal

Main Irrigation Canal

Fayoum - Cairo

**Map 5: Kom Osheim  
Project Area,  
1981**

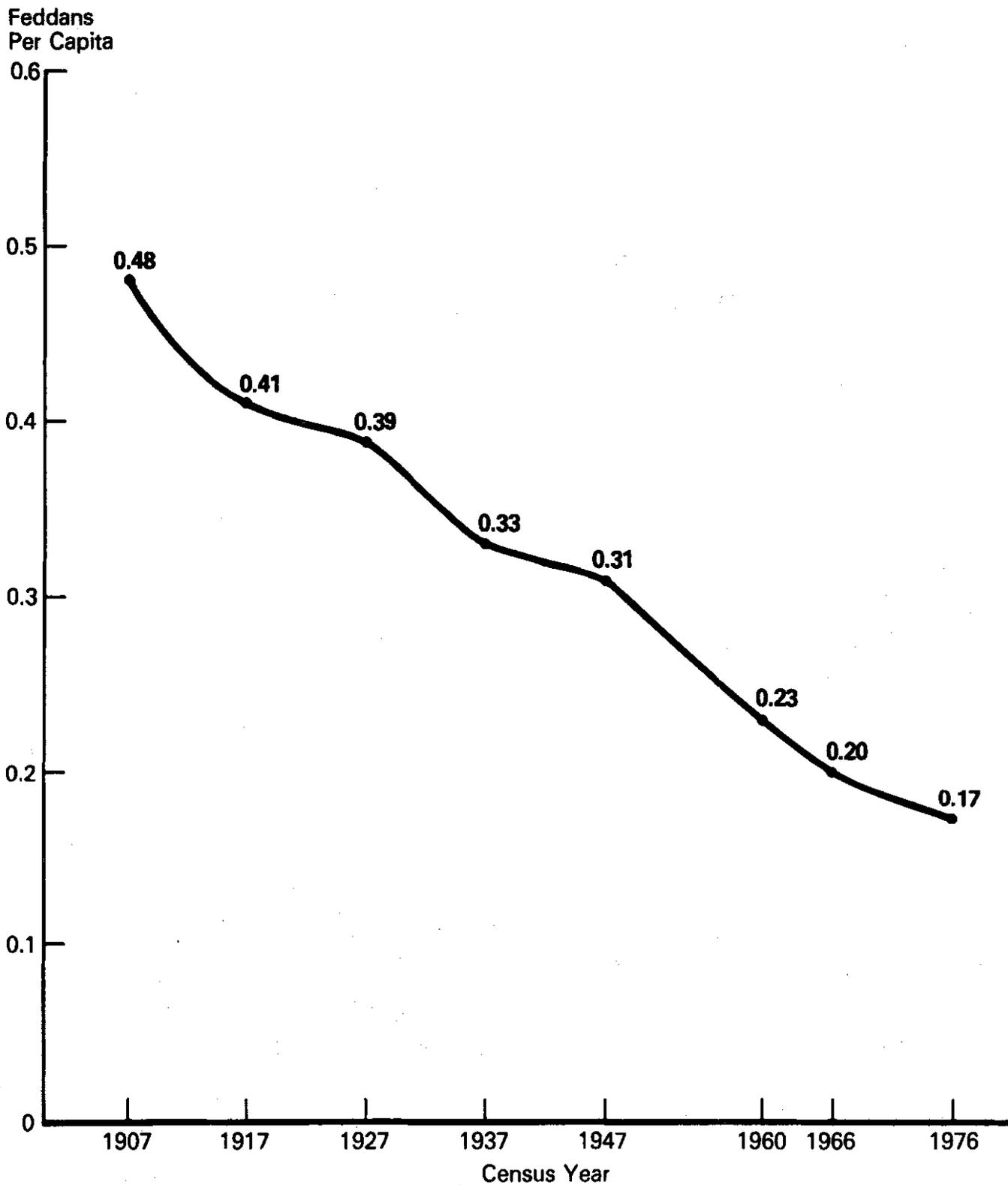
**Legend:**

-  Irrigated Reclaimed Land
-  Reduced Production, Inadequate Irrigation
-  No Production
-  Village
-  State Farm
-  Landing Field
-  Tree Farm

**Scale:**  
0 0.5 1.0 1.5  
Kilometers

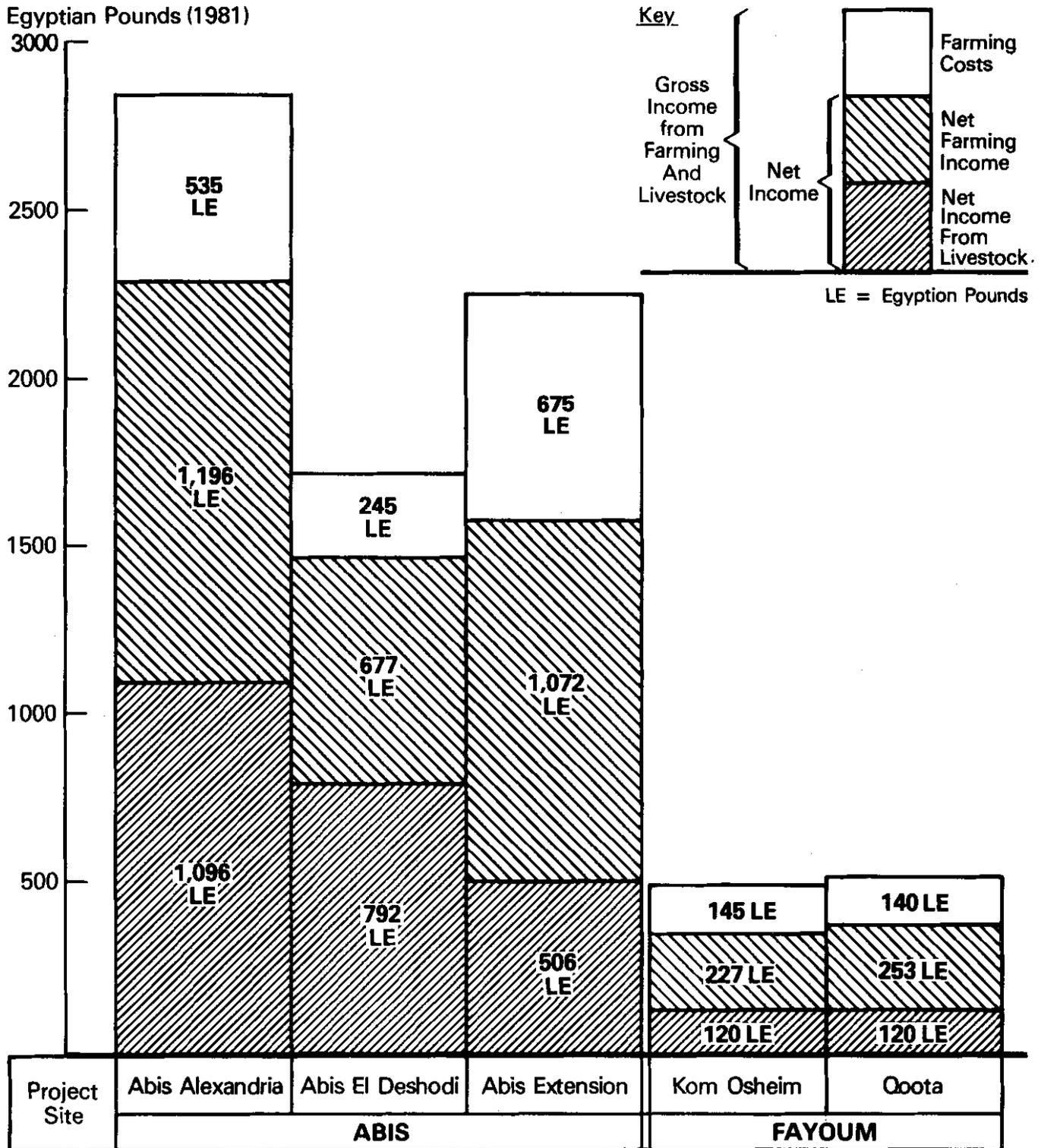
**North Arrow:**  
N

**Figure 1:  
Land/Man Ratios in Egypt, 1907-1976**



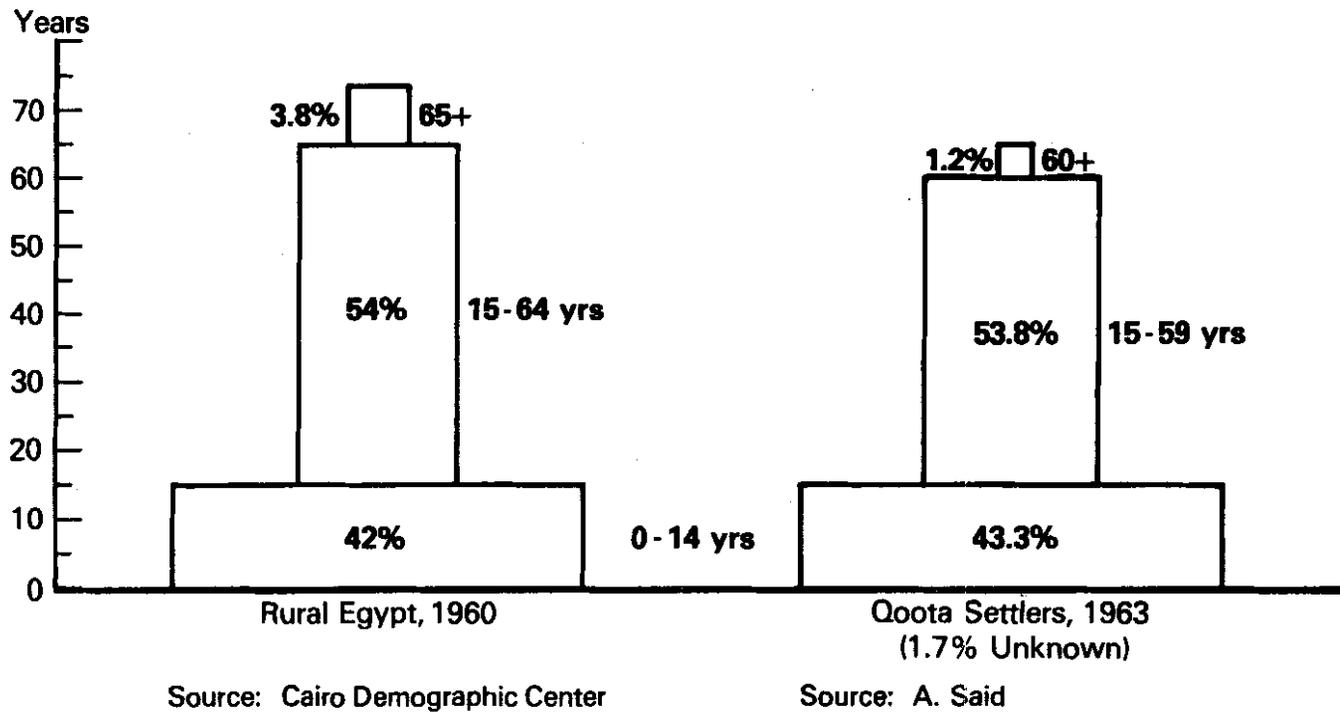
Source: Magdi Abd El Kader Ibrahim "Demographic and Socio—Economic Characteristics of a Newly Settled Community in Ibis, Egypt." UN-ARE Cairo Demographic Seminar, 1977.

**Figure 2:  
Estimated Average Family Income from  
Agricultural Production in EARIS Sites**

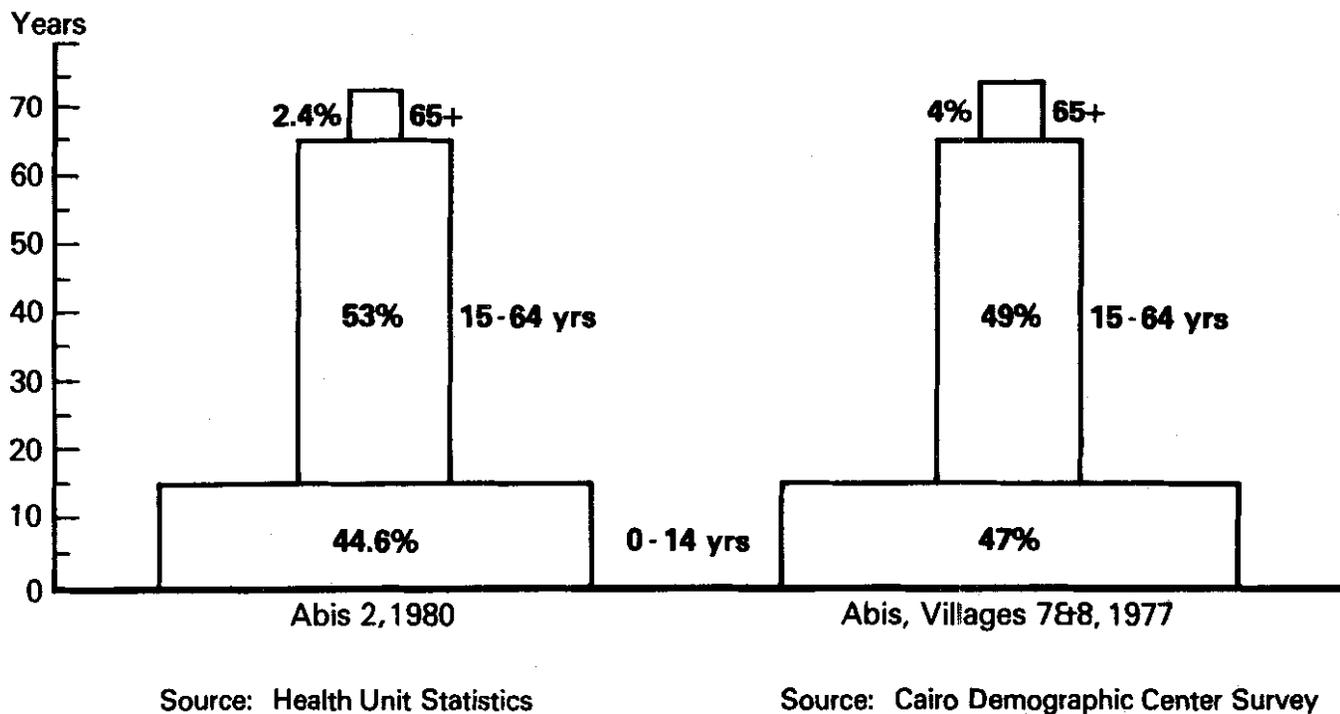


Source: Appendix E, Statistics Supplied by Local Agricultural Cooperatives, 1981

**Figure 3:  
Age Structure of Settlers Compared with Rural Egypt**



**Figure 4:  
Current Age Structure of Resettlement Villages, Abis**



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