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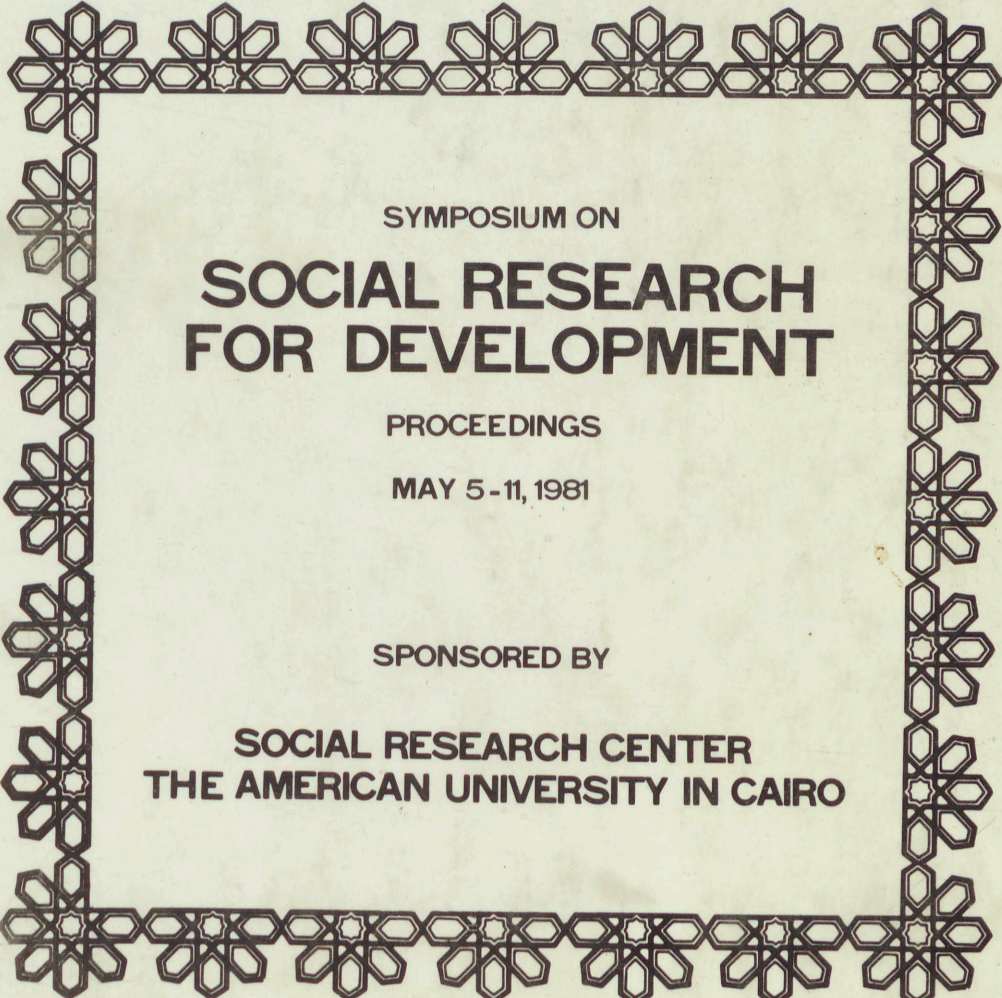
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THE DEVELOPMENT POTENTIAL OF LAND SETTLEMENT

(The Egyptian Case)

by

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THE DEVELOPMENT POTENTIAL OF LAND SETTLEMENT

The Egyptian Case

I. INTRODUCTION

This paper discusses the state of the art as it relates to land settlement, with special emphasis on the policy implications of existing literature and of gaps in current knowledge as they relate to Egypt. While each settlement scheme may have its own unique characteristics and should suit a particular habitat or setting, we assume, however, that broad or general concepts and policies are essential and should be developed as land settlement projects tend to have common problems and settlers often develop similar coping strategies.

Of the several types of new land settlements, this paper addresses itself primarily to planned movements of populations to areas of underutilized agricultural potential. Whether voluntary or compulsory, land settlement schemes are often government-sponsored and planned from above. In other words, they involve the intervention of an organizational entity (whether national, international, or probably both) which plans and implements land settlement projects with some varying degrees of settlers participation.

Though intensification of production in long-established agricultural areas must remain the number one priority in Egypt and most other countries, vast areas of uncultivated lands in a number of developing countries, including Egypt, are potentially cultivable. As man/land ratios in already settled areas continue to rise, the number of those seeking a livelihood in new lands are likely to increase. In its Indicative World Plan for Agricultural Development between 1975 and 1985, FAO, for example, estimates that there are several million km² of unused arable land in Latin America and the Old World tropics. In West Africa alone there are approximately 700,000 km² that are underutilized because of onchocerciasis which is currently the focus of a major international control operation (World Bank, 1978). In the Arab region as well as in Southern Asia, a variety of land settlement projects are currently under way or in

the planning stage.

Despite its appeal to planners and policy makers the planning, implementation, and management of new lands settlements is fraught with difficulty, with the success ratio in terms of economic and social viability -- both from the point of view of the settlement administration and the settler population -- being discouragingly low. The poor record to date should not be too surprising when one considers the magnitude of the task of trying to create from scratch new communities which are ecologically, as well as economically and socially, viable. Examining past experiences with land settlement and thinking in terms of the future, it is time now to synthesize. After decades of worldwide concern with, and attempts to establish viable communities in new lands, it is essential that we pull existing knowledge together in order to develop a systematic framework for evaluating and rehabilitating existing new lands settlements, as well as planning, implementing, and managing new ones.

Agricultural land settlement is largely a phenomenon of the post-World War II period, although some earlier government-assisted efforts can be found in the history of some countries. The post-World War II decade marked an era of great interest in, and national and international support for, planned settlements in areas of Latin America, Africa, the Middle East and Asia (World Bank, 1978). For Egypt, both the vertical and horizontal expansion of agriculture became, since the mid-fifties, basic to a national development strategy on the margins of irrigated land or the shores of Lake Nasser. The third type predominates with type four best exemplified by successive Nubian relocations in connection with the raising of the Aswan Dam in 1912 and 1933 and the High Dam in 1963.

In the international arena, the World Bank is the leading international agency funding new lands settlement. According to the World Bank Agricultural Land Settlement issues paper of 1978, two approaches to land development may be envisaged though in both cases results often fall far short of expectations. One has as its major objective efficient development of the natural resources in the project area. Typically, capital-intensive development and production efficiency and attractive financial returns dominate project objectives. Employment creation and development of human resources are concomitants of this

approach, though often considered of secondary importance. The other approach to land settlement has a stronger social orientation of project objectives, with greater emphasis on employment and income distribution goals. The pace of physical development is slower, but settlers are more heavily involved both in decision making and labor contribution. Cash inputs and yields per hectare may be lower, agricultural support and social services provided by governments are minimal, and public sector costs per beneficiary relatively low. Settlement projects assisted by the World Bank are found along a continuum between these two approaches, while in Egypt the emphasis has been on the first type--with attention focused more on land resources than on human resources. Yet yields per unit of land continue to be disappointingly low.

Though government-sponsored projects involving voluntary settlers predominate, World Bank expertise and funds have also been used in connection with agricultural land settlement and development projects that require the forced removal of tens of thousands of people. During the latter portion of the 1970's, more concern with the socioeconomic aspects of both types of Bank-assisted land settlement schemes had been shown. In a 1979 memorandum, the Bank addressed itself to basic issues related specifically to resettlement and made it explicit that "when development projects cause people to be compulsorily displaced, the Bank's general policy is to help the borrower to ensure, to the extent possible, that after a reasonable transition period, the displaced people regain at least their previous standard of living, and that they be economically and socially integrated into the host communities. Planning and financing the resettlement should be an integral part of the project, and the measures to be taken in this regard should be clarified before, and agreed upon during loan negotiations."

II. LAND SETTLEMENT IN EGYPT

A. Background Notes

Government-sponsored and financed land reclamation and settlement schemes in Egypt fall into three major types. The first is voluntary and is based on the selection of farmer applicants who are expected to resume their rural life in new communities where agricultural means and social amenities are provided and supervised by the government. Through 1975, the reclaimed land for this

type of settlement has reached approximately 880,000 feddans (one feddan equals 1.038 acres or 0.42 hectares) in the Nile Valley and Delta, divided into ten administrative sectors (see figure 1) each divided into farms of about 5,000 feddans, which in turn are subdivided into sub-farms of some 1,000 feddans. On this reclaimed land, some 56,000 farm families have been settled and an unknown but comparatively small number of non-farm jobs created.

The second category refers to the involuntary or compulsory type of population displacement, where no selection of the settlers is practiced. Rather, it involves the entire community, as has been the case with the Nubians whose villages were flooded by the water impounded behind the Aswan High Dam. Some 100,000 Nubians in Egypt and the Sudan had to move out of the Nubian Valley and were given plots of newly reclaimed land in the New Nubia near Kom Ombo, Upper Egypt and at Khashm El Girba (presently known as New Halfa) east of Khartoum in the Sudan. In Egypt, the Nubian case is the main example of compulsory relocation. It involves approximately 27,000 feddans of reclaimed land.

The third kind of land settlement that Egypt has experienced is the sedentarization of nomadic groups. In 1961, the General Desert Development Organization (GDDO) was established to develop desert areas by reclaiming lands, tapping the underground and subterranean waters and to settle the nomadic population on the reclaimed land (before the establishment of GDDO, the Cairo Desert Institute showed interest in the same problems and carried out several intensive studies, but its efforts led nowhere because its aims were purely academic [Abou Zeid, 1979]). A major effort in sedentarization has been directed at the area of Mersa Matrouh, almost halfway between Alexandria and the Egyptian/Libyan border. The objective of sedentarization in this area is to change the Bedouin from nomadism to agriculture. As Abou Zeid reported in 1979, a number of sedentarization projects have been launched in different parts of the desert and canals have been dug to carry fresh water from the Nile to the fields. In some cases houses were built to accommodate the Bedouins who would like to settle down. Primary schools, health clinics and social welfare units were built and equipped to extend badly needed help. Only a relatively small number of semi-nomads accepted the idea of sedentarization, however, and the total acreage involved is relatively small.

Looking at these three types of land settlement in terms of government's goals and involvement, one finds that the first type is the most common and has priority in the government's national development plans. It has also carried with it great expectations in terms of achieving production gains in the new lands. For compulsory relocation schemes, which involve taking land out of production and transferring the local population elsewhere, the government's policy was to have an even or fair trade between the lost and new land allocated for the displaced people. Notwithstanding, the Nubian case has concluded that while this compulsory type of land settlement does share common problems with the other two categories, it still has its unique characteristics, sensitivities, and conditions. The inherent resentment to relocation on the part of the displaced people aggravated by a stressful transition and possibly common antagonistic, suspicious attitudes toward the resettlement administration can all be responsible in developing a tense relationship between the government and the settlers. In addition, and more seriously, the long lag in time (often ten years or more) in bringing the new lands up to a viable production level can cause or promote a serious case of apathy, create a dependency syndrome and prolong, if not jeopardize, adjustment.

The third type of land settlement schemes, i.e., the sedentarization of Bedouin populations, often involves political concerns much more than mere development objectives. Since the Bedouin life style has been generally economically marginal to national development plans, Bedouin settlements aim to develop existing and new water points to help increase pasturage and animal production. Land reclamation is also gradually introduced on a small scale in order to facilitate seasonal crops and encourage settlement. These water points serve as places where government services, such as schools and health clinics, can be installed and used.

In addition to these three types of land settlement, Egypt witnessed, although on a very small scale, the undertaking of a spontaneous type of population movement in which the government agencies (through the provision of site and limited service facilities) directed settlers to carefully chosen arable lands. For instance, this type of land settlement and development is currently taking place in several sites along the lake's shores behind the Aswan High

Dam (Fahim, 1981).

Though with increasing emphasis on land allocation to small farmers, middle class farmers (University graduates) and joint ventures, it is expected that the first type of government-initiated and sponsored land settlement will continue to be common and basic to national development policies. While the sedentarization of the Bedouins may also exist on a gradual and small-scale basis, forced relocation and its concomitant land schemes is not, and actually should not, seriously be considered unless it becomes part of a larger scheme whose overall potential is such as to substantially outweigh the costs incurred in relocation and decades of subsidies. The social cost is also inevitable; "it is hard to imagine a more dramatic way to illustrate impotence than to forcibly eject people from a preferred habitat against their will" (Scudder 1973: 51).

In 1977, the preliminary results of the 1976 national census indicated that the population in Egypt had reached some forty million, while the cultivated acreage within the Nile Valley continued to shrink. Consequently, a new emphasis was placed on the agricultural horizontal policy through land reclamation. Egypt proclaimed that it had entered a new stage, which was termed, "the conquest of the desert." The idea was to launch an aggressive scheme of reclamation and the establishment of new settlements in Sinai and the western desert. In a November, 1978 publication, the Ministry of Irrigation and Land Reclamation identified potential new lands for reclamation amounting to 2,818, 100 feddans.

In an attempt to learn from its past experience with land reclamation and settlement, the government of Egypt has recently begun to consider and adopt new policies. Two policy provisions may improve the present situation and provide more positive results in the future. First the role of the government will be minimized to include only the physical aspects of reclamation and farming while leaving management to individuals and private companies. Second, the decentralization of governmental process, if implemented properly, could facilitate and accelerate the physical works required for land reclamation. Recognizing that land reclamation and settlement in Egypt is very important for so-

cial and political reasons, and that potentially favorable economic rates of return are possible for selected, well-planned activities, Egypt has launched a comprehensive assessment of land development and its requirements. Through a contractual agreement with the United States Agency for International Development (AID), Pacific Consultants, for instance, completed in 1980 its overall appraisal study on new lands' productivity in Egypt and measures for improvement. Other studies are currently being undertaken as well. New agricultural policies should emerge especially as a result of the current integrated studies of nationwide water development and use.

B. RESEARCH AND LAND DEVELOPMENT IN EGYPT

Past research points out the tremendous complexity of planned land settlement and development. Planned settlements are, as United Nations sociologist Raymond Apthorp has described them, "experiments in nation-building in miniature" (Tadros 1980: 1). It is already difficult enough to analyze, plan, implement and manage the technical aspects of land reclamation and settlement. As Waterbury concludes from a Cairo workshop held in 1971, "the dangers are myriad: projects can be engulfed by sand, rendered useless because of inadequate drainage and soil salinity, unsuited for the kinds of crops planned for them because of faulty soil research, or atrophied because related aspects of physical planning, such as the building of access roads and procedures for marketing produce, were not integrated into the original plan" (Waterbury 1972: 3). But physical planning upon which the project's viability will ultimately depend. The nexus of social challenges encompasses a gamut of little understood problems of peasant motivation, commitment, and capacity to learn.

Because of this complexity, it is not surprising that research in Egypt or elsewhere continues to document more disappointments than successes with planned settlements. Indeed, the failure rate for all types of government-sponsored land settlement projects in new lands has been discouragingly high throughout the world. Planners must seriously consider the implications of this record. Because settlement programs possess an utopian appeal, reflect certain social goals at the national level, and present a tempting opportunity to design something from scratch, planners continue to advocate ambitious new settlement programs without sufficiently considering a variety of other less spectacular

but perhaps more realistic alternatives.

Recent studies indicate that the peasant is more innovative than his image may suggest, and his ancient ways contain a great deal of folk wisdom that governments and international planners must stop scorning and start adapting. While it is still fashionable for planners and administrators to lambast the peasant, the social scientist has switched his attention to the settlement planner and administrator. Because new land settlements are planned from above, one must, in Palmer's words, "lay the blame for the preponderance of failures to the scheme planners" (Palmer 1971: 268). Social researchers are not, of course, interested here in laying blame in one place or another; they should, nonetheless, study settlement projects as complex systems that include not just the settler and his surroundings but also the settlement organization.

In spite of the fact that considerable research has already been carried out in connection with human settlements on new lands in Egypt and elsewhere, comparatively little of this has been utilized by planners. Examining this serious problem of inadequate utilization of research results, the experience of the Social Research Center at The American University in Cairo, may provide some clues concerning social research and national development in Egypt.

The Social Research Center of The American University in Cairo has been involved for several years in research on human aspects of the establishment and management of land settlement schemes in Egypt. The Center's main objective is the study of developmental issues, with the dual purpose of contributing to social science knowledge and providing analyses of service to Egypt's developmental efforts. The center is also concerned with the problems of communication between researchers and planners/administrators. Along this line and because of the need for comparative social studies of numerous land settlement experiments in progress in Egypt and in other Middle Eastern countries, the Center organized, in September, 1971, a regional workshop on the planning and development of new rural settlements. The proceedings of this conference recently came out in a volume titled Human Settlements on New Lands (El Hamamsy & Garrison 1979).

Following the 1971 meeting, and during a four year period, the Center, in collaboration with the Egyptian Authority for the Utilization and Development of Reclaimed Lands (EAUDRL), undertook a study on, and made an evaluation of, the rehabilitation process in the newly settled communities in land reclamation areas. This study had two main objectives: the first was to provide systematic information on the design and implementation of planned rural settlements; the second was to describe and analyze the rehabilitation process and associated problems in relation to socioeconomic development. Two major areas, the North-western Delta and New Nubia, in the Kom Ombo region, were chosen as research sites. Reports on the two components of this study were prepared by Fahim and Tadros (see bibliography) and were submitted to EAUDRL and HEW, the former U.S. Health, Education, and Welfare Department, which funded the undertaking of this research.

Although the research done by the Center, whether in Nubia or in the North-western Delta sector, had a formal affiliation with the concerned government departments, in terms of granting the research permit and facilitating fieldwork, there has not been an apparent impact of research findings on policy. Among the reasons for such an unhappy ending of long term and costly research work are those uncertainties and sometimes shifts in land settlement goals and policies and the turnover of government officials and administrators. While the Center had some sort of a formal recognition for its undertaking, it has never seriously become part of the policy-making process. At times, Fahim felt that the talk of a research input for development was no more than lip service, a show-off case without a serious attempt to institutionalize it within the settlement authority so that strengths could be capitalized on and weaknesses corrected.

The Center's research also suffered from several methodological shortcomings. In general, Fahim believes that land settlement schemes have been over-surveyed and underresearched (though as Sukkary has pointed out in a 1980 report by Pacific Consultants, overall, "the available sociological literature on land reclamation projects is sparse, and much of it represents the norms for setting up communities in the new lands" p.22). While the Center's studies were more or less comprehensive at the descriptive level, they lacked systematic long term analysis of the settlement process, including its relationship to ecology, pub-

lic health, farm management, agricultural economics, and, particularly organizational structures of agencies responsible for settlement operation. The information provided by the land settlement research was not only insufficiently detailed in some areas, but it was also too late for certain policy issues to be of use to the planners. Furthermore, the researchers involved in these studies suffered from poor channels of communication with the planners and at most times felt frustrated to see their efforts inflicted by the "buried reports syndrome".

II. THE EGYPTIAN EXPERIENCE IN INTERNATIONAL PERSPECTIVE

1. General Assessment

Egypt's program of land reclamation and settlement has not lived up to expectations, especially in regard to the ambitious plans and great expectations of the sixties. In the early 1970's the government became convinced that the land reclamation operation had been costly, yielding scant productivity and few economic returns. The situation was so discouraging that in March, 1971 the government called a halt to any further land reclamation. The returns from a total of 912,000 feddans that had been reclaimed between 1952 and 1975, representing some 15 percent of the total cultivated area in the country, had been minimal. Of the 912,000 feddans that had been reclaimed through 1975, 139,000 "are designated for public utilities (irrigation and drainage works, roads, buildings, etc.). The actual agricultural area is only 773,000 feddans. Of that, 40 percent, or 309,000 feddans, has reached marginal productivity, and 28 percent, or 216,440, is cultivated but below marginal productivity. Cultivation has been delayed by engineering problems and the need for complimentary projects on 20 percent of the area, 154,000 feddans, and land reclamation and cultivation have been suspended altogether on 12 percent or on 92,750 feddans" (Voil, 1980: 129).

Land reclamation has proved to be a technically complex, time consuming and costly operation. According to Voil (1980), in the 1950's the combined cost of reclamation, cultivation and community development came to less than £E 200 per feddan at Abis whereas current costs are closer to £E 1000 (\$2,300). Settlers pay only £E 200 for each feddan they receive, repayable over 40 years. Considering the high and on-going inflation rate in Egypt, these figures should

be looked at as tentative estimates and are, of course, expected to increase.

In a recent 1980 assessment of the productivity of the reclaimed land in Egypt, Pacific Consultants reported that while financial returns to individual farmers generally were positive, economic returns to Egypt tended to be negative. This was because of high management overheads and because no water rates were charged, costs of electricity and fuel for pumping irrigation water were high and were "heavily subsidized", and - as noted previously - settlers repaid only a fraction of the land reclamation costs. There were also a wide range of constraints which kept settlers from increasing their productivity, the large majority of which related to management rather than settler inefficiencies. According to the Pacific Consultants team, the major constraint related to poor operation and maintenance of the irrigation system, while other constraints included inadequate prices for cereal crops, untimely delivery of critical inputs (including fertilizers which settlers are quite willing to purchase and use), inadequate short and medium term credit (settlers are not eligible for the latter because they lack land titles), and periodic labor shortages (though these have been more serious on state farms).

As for the state farms, not only have these been inefficiently managed, but also government policies have vacillated as to the nature of the government's input and the degree of intervention in farm management (Pacific Consultants 1980). According to a World Bank study (1978) on economic management in Egypt (1950-1976), there are also problems of economic policy-making and coordination. Because of the long and extensive involvement of the government in the economy, the issue is not limited to improving or modifying this or that policy measure. A complete overhaul of the whole system of policy intervention is timely and necessary.

Clearly, as Voll points out, it is important for government to consider a wider range of alternatives, including of course those which do not involve land settlement, such as increasing the productivity of the old lands (through improved drainage, for example) and increasing employment in both rural and urban areas. This is because economic returns to date from land reclamation and settlement have been relatively marginal. Though reclamation and settlement has absorbed 40 percent of the "total public investment in agriculture, their

contribution to the total agricultural production is less than one percent" (Voll 1980: 148). As for absorption of landless peasants, some 56,000 farm families have been settled out of a total of over 1.5 million landless rural families. Actually this is not an insignificant accomplishment, and since land settlement in Egypt, as elsewhere, is carried out for social and political, as well as economic reasons, it would be unrealistic to suggest that the Egyptian government stop all reclamation of new lands. Now that a major effort is commencing to reclaim, colonize, and develop the Eastern Desert-Sinai area it is imperative that social researchers in Egypt make available to the relevant authorities the results of settlement research in Egypt, the Middle East and throughout the world so that the quality of settlement planning, implementation, management and evaluation can be improved, hence raising the chances for settler and settlement success. The paragraphs that follow are designed to present some initial comments on the policy implication for Egypt of some of this research.

2. A DEVELOPMENT FRAMEWORK FOR LAND SETTLEMENT

Hundreds of unpublished papers, and published articles and books have been written on individual settlement projects around the world. A smaller number of country-wide and regional studies have also been prepared, the authors often being geographers, political scientists, economists, and to a lesser extent, anthropologists. In spite of the large number of sources, few deal with the latter stages of the settlement, and settler recruitment and the first few years of the transitional stage that follows. In the past few years, Scudder has attempted to partially correct this deficiency by concentrating on the analysis of older projects (as part of a global evaluation of new lands settlements in the tropics and subtropics which has been sponsored by the Institute for Development Anthropology with funding from the United States Agency for International Development).

An initial conclusion of Scudder's research is that new lands settlements throughout the world constitute a distinctive type of subsystem which must pass through a series of developmental stages before they can be considered economically and socially viable. The entire process takes at least a generation, and during each stage a variety of basic issues arise, most of which have important

policy implications (some of which will be examined against the Egyptian experience later in this paper).

While Scudder's developmental framework draws on the earlier work of other researchers, and especially that of Robert Chambers (1969) and Michael Nelson (1973), a greater emphasis is placed on the farm and non-farm residents of settlement areas and on the processes whereby they adapt to their new surroundings (including the physical habitat, new production techniques, and increased interaction with government officials and new neighbors), increase and diversify their productivity, raise their standards, and evolve sociopolitical institutions for making their demands known at the local, regional, and national levels. Because we believe this framework is relevant to the analysis of new lands settlement in Egypt and to the design of future research, it is briefly outlined in the paragraphs that follow.

Scudder postulates that four stages are involved. These are (1) Planning, Infrastructural Development and Settler Recruitment; (2) Transition; (3) Economic and Social Development; and (4) Handing Over and Incorporation. The most frequently isolated Stage One is the best understood. It can be divided into two substages of which the first relates to feasibility studies should consider a wider range of options (including non-settlement options) than is usually the case. Should the decision be made to proceed, the scope of planning should also be broadened to include such topics as (1) integrating spontaneous settlers with government sponsored ones (hence reducing costs per settler family); ensuring that the scope (and the size) of the settlement, the expected net income of settlers, and the nature of the farming systems are sufficient to initiate a process of area development (including both farm and non-farm employment and rural and urban development); and (b) phasing infrastructure so as to reduce the magnitude of upfront capital costs. As for recruitment, greater success can be expected if selection and orientation include both the husband and the wife rather than the former alone and if farming skills are supplemented by other skills that characterize established communities.

The Transition Stage (Stage Two) begins with the arrival of the first settlers. A stage of adaptation, it is seldom shorter than two years and may con-

tinue indefinitely in poorly planned, implemented and managed settlements. Moving to a new community involves both risk and uncertainty for settlers. "While learning the ropes, most settlers adopt a conservative stance, their first priority being to meet their subsistence needs. They favor continuity over change; and where change is necessary, they favor incremental change over transformational change" (Scudder 1981). They tend to cling to the familiar, preferring to settle with relatives, former neighbors and co-ethnics wherever possible, and to transfer to the settlement old production techniques, crops, arrangements for recruiting labor, and a wide range of institutions and values. Since land use tends to be more extensive than intensive during the transition period, the expectations of most planners for rapid increases in productivity during the initial years of settlement are unrealistic. (Ironically, while planners tend to overestimate the magnitude of early returns from new lands settlement, they also tend to underestimate the extent to which successful settlement can catalyze a process of area development at a later stage - partly because current techniques for calculating internal rates of return ignore multiplier effects.)

Stage Three (Economic and Social Development) begins when enough settlers shift from a conservative to a dynamic and open-ended stance; in other words, when a dynamic change in settler attitudes and behavior takes place. Preconditions would appear to include production of sufficient food (or income) to meet family consumption needs, an increasing perception of the settlement area as "home", and the emergence of community-wide socio-political organization and such production oriented settler organizations as farmers' unions, water user associations, cooperatives and rural and municipal councils. One Stage Three commences settlers appear to follow a remarkably similar series of development strategies around the world. Though more data analysis is needed, initially (and starting during Stage Two) settlers "invest in education for their children indicating a willingness from the start to forego returns from the labor of those children in agriculture in exchange for possible remittances and other support ten or more years later. Subsequently additional farm land is sharecropped, leased, and/or purchased, and the farming system is expanded into cash crops (including labor-intensive, high-risk crops). The crop component itself is expanded to cover livestock and nonfarm activities. Nonfarm activities tend to start on the farm homestead, taking the form of small business

enterprises, such as crafts, baking, and tailoring, which are located within the home. The home itself may be extended, with rooms rented out to laborers and officials -- and in some cases a separate house is built for rental income. Subsequently investment expands to nonfarm activities off the homestead but within the settlement areas, with these including small general stores and transport for hire in the form of two-and four-wheel tractors, trucks, taxis, and mini and other buses. Still later, as observed in Egypt and the Sudan, investments are made in urban real estate (both land and housing) and businesses" (Scudder 1981a).

This sequence of investment activities involves the entire family - not just the male head of household, with Scudder personally observing it in Africa, the Middle East and Asia. Considerably more dynamic than the conceptualization which most planners have for new lands settlements, this sequence of activities has major development implications. Furthermore, as incomes rise, many settlers hire laborers for a variety of agricultural tasks, with family labor reallocated to more productive activities including off-farm employment and investment. As for the laborers, they too appear to follow a rather similar sequence of development strategies in different settlement areas of the world. Initially, they attempt to convert casual employment to permanent on-farm employment; and finally they attempt to obtain settler allotments for themselves either through marriage, land purchase or settlement of marginal areas along project fringes. On most irrigation schemes it is unrealistic for planners to expect successful families to continue employing only family labor. Although the ideological justifications for such policies are often commendable, they ignore a legitimate need to supplement family labor during certain phases of the development cycle of the farm family and during peak periods of labor demand-especially as farming systems are intensified. They also ignore the dynamic nature of successful settler investment strategies. Furthermore, it is neither in the interest of employment generation nor the welfare of farm laborers to ignore their existence, for then they become "forgotten people" without adequate social services or development programs to help them improve their position.

While the third stage must occur if development is to occur, Stage Four (Handing Over and Incorporation) is required for perpetuating the settlement as

a successful economic and socio-political entity. Handing over refers not just to the "successful ability of a second generation of settlers to maintain and increase production levels, but also to the ability of specialized or national settlement development agencies gradually to hand over certain developmental, managerial, and operational (O and M) activities to a wide range of locally based organizations. These include the local departmental offices, for example, of the ministries of agriculture and public works, as well as rural and municipal councils, and such settler participatory action organizations as water user associations, farmer unions, cooperatives (including women's cooperatives) and a wide range of residential associations. This type of handing over is essential for two reasons. First, recent studies (see, for example, Development Alternatives, Inc., 1975) indicate that active and effective participation of settlers in the planning, implementation, management, and evaluation of development projects (including new lands settlements) is correlated with a higher degree of project success, as is the creation of effective farmer organizations from the local to the project level. Second, recent studies also bring into question the ability of centralized and hierarchically organized settlement agencies to maintain through time their momentum and especially their efficiency in terms of developmental and O and M activities which are crucial to the continuing success of the project.

The purpose of incorporation is to end the settlement's status as a special enclave through its incorporation as an integrated part of the encompassing region. Though partially the result of a successful process of handing over, the incorporating agencies must also have the resources and the will to handle, for example, the upkeep of roads with associated culverts and bridges that access settlement areas. Incorporation also need include the integration of such settlement organizations as water user associations and farmer unions at the regional and national level so that they are in a position to compete for scarce resources" (Scudder 1981b).

3.2 SOME POLICY IMPLICATIONS OF NEW LANDS SETTLEMENT RESEARCH

- a. The need to use settlement as a mechanism to catalyse a process of area development

New lands settlements in Egypt have been criticized, on the one hand, as

being too narrowly focused on land reclamation as opposed to cultivation (and hence agricultural production) and farming communities and, on the other hand, as being too grandiose in conceptualization. Conceptualized in the 1950's, the Tahrir Project in particular has been singled out as an example of unrealistic and grandiose planning, with a million feddan project involving integrated rural development being gradually pruned back through time to a medium scale agricultural production scheme of under 50,000 feddans.

In noting this evolution, it is important to distinguish between the quality of past planning, which was poor (in terms of inadequate soil surveys, inadequate farming systems for sandy soils, inadequate management systems and settler participation, and a wide range of other variables), and the conceptual goal of settlement as a mechanism for achieving regional development. We would argue that while the planning was faulty the vision was correct. Throughout the world new lands settlements far too often are narrowly conceived agricultural production schemes focusing on a narrow range of crops with the result that they do not achieve their potential for generating non-farm employment, for catalysing dynamic and integrated area development, for concentrating both on agriculture and on the development of service, commercial and manufacturing centers within and adjacent to settlement areas. Corrective action requires planning and implementing agencies to be more knowledgeable of settlers - and it requires such agencies to broaden their perspective by paying more attention to settlements as complex and diversified communities, to farm families as opposed to individual farmers, to the livestock and off-farm components of the farming enterprise, and to the relationship between farm and non-farm families as development proceeds. It also requires more attention to be paid to local participation (of the right types) and to the development of local management capabilities so as to expedite the arrival of the Handing Over/Incorporation Stage.

While over-estimating the magnitude of early returns, planners worldwide have seriously underestimated the longer-term development potential of successful new lands settlements. Partly this is because of ignorance resulting from inadequate evaluation of the later stages of settlement; partly it is because indirect benefits from settlement are largely ignored during the planning phase hence de-emphasizing non-farm employment and urban development in connection

with settlement projects. Yet what evidence is available suggests that it is not unreasonable to expect irrigation-based settlements to generate employment for one non-farm family and one farm labor family for every settler family, hence greatly increasing employment generation (Scudder 1981b). As Weitz et al. have pointed out, to achieve such employment goals, settlements need be ambitious in scope and size, net incomes need be high enough to enable settlers to purchase a wide range of consumer and production goods and services, and the farming system need be diversified enough to provide food for those non-farm employees and employers providing those goods and services. With proper planning, implementation and management, it is not unrealistic for the Egyptian Government to use new land settlement as a mechanism for the integrated area development of the Western Desert-Suez Canal-Sinai Region.

b. The need for the rehabilitation of existing settlement areas.

Rehabilitation is desperately needed in irrigation-based settlements throughout the world so as to increase settler productivity and living standards, increase employment generation, revitalize management structures, and reverse on-going processes of land degradation, i.e., increased water-logging and salinity. Currently, rehabilitation is the major thrust in the older settlement schemes of the Sudan, with the Sudanese Government (with World Bank financing) currently undertaking feasibility studies on the large scale New Halfa and Gezira irrigation projects. Following their review of new lands productivity in Egypt, the Pacific Consultants team concluded that emphasis should be shifted from the reclamation of still unutilized new lands to the rehabilitation of existing new lands settlements. Though we have already noted why it is unrealistic to expect the Egyptian government to stop new large scale reclamation projects, clearly there is a tremendous need to rehabilitate existing settlement projects.

c. The need for greatly increased levels of settler and other local participation, along with major changes in settlement management systems.

There is increasing evidence that active settler participation in project management including the management of settlement schemes and of irrigation systems is correlated with increased efficiency and higher productivity. Yet in

Egyptian settlement areas, management strategies continue to be dominated by a "top down" development approach that virtually excludes the formation of effective settler participatory action organizations. As already mentioned, most new lands settlement areas in Egypt are run as state farms though evaluations by both Voll and the Pacific Consultants team show that the highest yields per feddan are achieved in most cases on settler farmed small holdings of five feddans. Though once again the government has shifted its policy so as to increasingly hand over state farm land to small-scale and middle-class farmers (the latter being graduates who farm 20 to 30 feddans), Egypt lags far behind other countries in actively involving settlers in project management or in routine day to day operation and maintenance of the irrigation system. There are, for example, no water use associations composed of settlers, nor have rural councils been extended to many settlement areas. The lack of settler involvement is especially unfortunate given the very real skills and farming experience of Egyptian peasants and the fact that their yields per feddan exceed those of state farms and graduates. Furthermore, Egyptian settlers know their needs and they know government inadequacies. As one settler told Sukkary, "give us water and fertilizer, and leave us alone" (Pacific Consultants 1980). Against this background, settlers should be encouraged to take more responsibility, although government inputs (like credit and research validated extension services) remain crucial.

Settlement research clearly indicates that serious consideration should be given to the formation of settler participatory action organizations consistent with the needs of settlement projects and with government ideology of decentralization and devolution of management responsibilities. In making this suggestion it is important to emphasize that such organizations should be run by the settlers rather than be the government; hence cooperatives should be seen by settlers as being "their" organizations rather than "government's." Furthermore, it is important that such organizations not be co-opted by local rural elites, who would use them for their own economic, social and political advancement-- often at the expense of the majority of the settlers. In the Egyptian case it could well be a mistake to encourage middle-class (graduate) settlers to take the initiative, since the experience with middle-class settlers in other countries (including, for example, on irrigated lands in Sri Lanka and India)

has been disappointing. Yields per unit of land tend to be lower than is the case with smallholders, partly because middle-class settlers often prefer not to work their land, either hiring laborers or contracting share-cropping or lease hold arrangement. Furthermore, there is also the risk that they may take over local institutions.

Water user associations are particularly appropriate for both the involvement of smallholders and for achieving increased productivity since they are based on actual irrigation turnout units. Furthermore, they can be organized in such a way that within the turnout unit the interests of bottom enders can be protected against those of top enders. Their lack is particularly unfortunate in Egypt since their existence, and federation up to the project level, could be expected to improve water management, the Pacific Consultants team concluding that poor operation and maintenance of the irrigation system is the major constraint to increased settler productivity.

IV. RESEARCH RECOMMENDATIONS

A. Overview

As the settlement literature is largely based on one-shot studies or short-term surveys of one aspect or the other of the design and development of human settlements on new lands, there is a need for systematic long-term studies. And because land settlement is a multifaceted process, short-term studies are usually restricted to a particular stage of a particular project. Timeliness is therefore crucial. Contrary to this type of research, a systematic long term study perceives the project in its totality and accounts for the encompassing of all elements; it also examines the project throughout its development and in a time continuum perspective. Both types of research are, however, necessary and appropriate to achieve a continuing appraisal of the development process.

In order to be able to meet the complex and long lasting challenges of land settlement and to take full advantage of the opportunities that may arise, those who are responsible for design and management need, in El Hammamsy's words, to have systematic knowledge of the social dynamics and processes underlying the evolution of land settlements. While static knowledge of the various distinct stages of the total process of settlement building is usually available, what

is vital is information collected throughout longitudinal studies documenting and analyzing the whole dynamic process of settlement development. Such information should be provided, not only through social science research, but also through administrative record-keeping and evaluation (El Hammamsy 1979).

While the evolution of the design and management of land settlement through research and evaluation is a given, it is basic to take into account that land settlements are characterized not only by complexity but also diversity. Every project is unique, and each faces unique problems requiring unique solutions. Nonetheless, comparative research has concluded that regardless of locale, socio-cultural background of the settlers, and the strategies of the settlement planners and administrators, new land settlements constitute systems or subsystems which have certain common characteristics both in regard to the coping strategies of its members at different points in time and in regard to relationships with administrators and hosts (the latter defined as prior inhabitants with customary rights especially over land).

Largely unaware of these coping strategies and of certain key problem areas in regard to a settlement's relationship with its habitat - strategies and problem areas that have important policy implications -- planners and administrators frequently repeat the mistakes that have been made to present the results of research to planners in an appropriate time and fashion. While we do not question the planners' intelligence and consciousness, we urge the need for an educational approach to land settlement issues and national development problems in general. The World Bank has recently made a good start along this line in terms of organizing in-service seminars and issuing periodic guidelines, papers and memoranda. At the national level, concerned government departments, in collaboration with research institutions, should get involved in an educational endeavor directed at both planners and researchers to attempt to bridge the gap and increase communication and enhance possibilities for success in developmental efforts.

B. FUTURE RESEARCH DIRECTIONS

We need to learn more about the processes through which settler families

begin to expand their coping strategies, diversify their economic base and "feel at home." To cite other examples, the phenomenon of "drop outs" in several settlement projects also needs to be thoroughly and comparatively studied. After identifying the major reasons for settler failure, it should be possible to suggest a number of ways in which the "dropout rate" can be significantly reduced through both government and settler action (the latter including assistance, for example, from local settler organizations which have a multifunctional role to play on all types of settlement).

We need, too, to look into new technologies and more diversified farming systems, including livestock and non-farm components, to increase productivity and economic returns for the settlers. Most of the new lands are inherently less productive with known technology than areas already cultivated and will require new approaches for efficient exploitation. On the research front, some new priorities may be required to develop efficient small-scale farms. This is particularly significant for Egypt which has a predominance of small farms averaging a little over three feddans.

Most recently, in 1981, the Ezra Taft Benson Agriculture and Food Institute at the Brigham Young University, Utah, has developed a conceptual framework to structure practical innovative research at the farm level designed to help small farmers increase productivity of both crops and animals. The scope of this small farm agriculture proposal involves plant and production systems at the small farm level: fertilizers and pest control within the systems, farm machinery and irrigation systems at the farm level, and efficient use of energy. The thrust of the Institute's proposal is the integration of the crop-animal-human nutrition system which will make production increases and nutrition improvement possible.

Directly related to the economic and social viability of the settler's community are the social position of women and the process of raising children. In many cases, planners have looked at the settlers' community only in terms of males and adults. They they overlooked how wives and children can share in scheme benefits. Separate economic activities for women are rarely built into projects. As a result, the status of women in a number of government-sponsored

settlement schemes in different parts of the World has actually deteriorated. This is partly because it is easier for the male head of the household, who is more apt to control family finances, to keep up kinship ties by periodically returning to the old habitat; partly it is because both national and international planners tend to view settlements not as communities or farming units but rather as composed of individual farmers, as has been the case, for example, in World Bank schemes in Zambia, Nepal, and Malaysia, this attitude strongly favors the male head of the household. In some schemes, the wife may be evicted when her husband dies; in most, planners have little consideration of her other than as a source of labor. Hence few schemes are concerned with how wives and children can share in scheme benefits and few schemes plan cash generating enterprises for wives and widows (Scudder 1978).

The subject of the next generation is also significant. Resettled Nubians, for instance, have invested in educating their children over the past years; not to "have them till the land" (as several informants have indicated) but to seek "decent jobs" in cities, and hopefully in other Arab countries. (When probed about the nature of "decent jobs," the answers unanimously emphasized "secured income. "). In this regard, a significant policy issue should be the "handing over" stage, when the male family head, by reason of death or disability, relinquishes his land responsibilities to women and/or children. It is also apparent that land settlement researchers should look at these schemes as an on-going activity and should account for the future as they do for the present.

These suggested research areas are only examples. Several other topics can be easily identified or revealed by using an integrated and temporal approach to land settlement problems. In terms of future research sponsored by the Social Research Center, we believe that a special attempt should be made to follow, through more systematic long-term research, the three main types of Egyptian settlement outlined in this paper. Since it is true that the rather exceptional case of Nubian relocation in connection with the Aswan High Dam has tended to draw more research attention, a special effort should be made to select a number of land reclamation projects based on the recruitment of voluntary settlers from the Old Lands of the delta and the Nile Valley for ongoing study. Where possible, ongoing research should continue earlier studies. Thus it makes sense to continue the SRC study of Abis by Tadros and colleagues. Indeed, fur-

ther study of Abis is particularly important since it is one of Egypt's more successful settlements if not the most successful. Particular attention should be paid to labor demands and the recruitment of hired farm labor, and to the extent that agricultural production at Abis has fostered non-farm employment and development of small and medium scale business enterprises, this being one means for assessing the extent to which Abis has facilitated a broader process of area development. There is some evidence, for example, that the more successful Abis settlers have invested in urban real estate and businesses in Alexandria and its suburbs. If so, this trend could have important development implications (and implications for social equity which need be explored).

Further study is needed of the Abis case not just to understand better the reasons for its relative success, but also to apply this knowledge to the planning, implementation, management and evaluation of the government's planned program for the Western Desert-Canal Zone-Sinai Region. There, too, some settlements will be located near urban centers, hence the importance of coming up with an area development plan which includes both settlements and urban centers rather than separate plans for each.

In addition to Abis, consideration should be given to continuing the survey research begun by the Pacific Consultants' team (including the sociologist Sukkary) at Tahaddi. As for the compulsory type of settlement, the Nubian study should continue. One of the few longterm studies of a new lands settlement, it constitutes a major investment in social science research which must not be allowed to come to an end. Nearly twenty years old, a particularly relevant topic relates to the handing over from the first generation of settlers to the second. Finally, ongoing research dealing with the third type of settlement (sedentarization of nomads) is also called for, such research being especially relevant for countries elsewhere in Africa which are faced with the possibility of massive sedentarization of pastoralists because of drought, desertification, and political disturbances, the situations in Somalia, Ethiopia and the Sudan being the major current examples.

There are also old research and policy issues that require a new outlook. We refer here, for example, to problems related to systematic documentation of land settlement schemes, communication between researchers and policy makers, in-

terplay between the technical and social aspects of land settlement. These issues and other questions were already raised and discussed a long time ago, even before the 1971 Cairo workshop, yet they are still problematic. Although there has been an increase in our knowledge of land settlement problems as well as a more positive response on the part of governments and international development organizations to social science recommendations, and sometimes warnings, it is time now, at the outset of the 1980's, to think seriously, constructively and creatively in developing new approaches and applying novel practices to make an efficient use of the development potential of land settlement schemes.

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