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FROM RELIEF TO DEVELOPMENT:
SOME COMMENTS ON REFUGEE AND OTHER
SETTLEMENT IN SOMALIA

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FROM RELIEF TO DEVELOPMENT: SOME COMMENTS ON REFUGEE
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Thayer Scudder

I. INTRODUCTION

From the start it is important to make clear seven assumptions that underlie the analysis in this report.

A. ASSUMPTION ONE

Between now and the year 2000 a major program of new lands settlement in Somalia is necessary if current citizens of Somalia are to become self-sufficient in food production and if they are to raise their standards of living. Should significant numbers of political refugees (hereafter refugees) remain in Somalia indefinitely, the need for such a program becomes even greater.

The assumption follows from conclusions reached by the World Bank's 1980 Agricultural Sector Review -- conclusions which strike me as fundamentally sound. According to figures available to the World Bank, the 1980 estimated population of Somalia was 4.2 million -- a figure which does not include refugees. The latter may well number at least one million people or more if we include refugees living in camps as well as those living with relatives in both urban and rural areas (especially during 1980 the evidence is suggestive that a significant number of refugees crossed the border from the Ogaden with their

livestock).

Again leaving aside refugees, the 1980 population of 4.2 million is increasing at an estimated rate of approximately 2.6 percent per annum, with the World Bank estimating a total population of 7.1 million by the year 2000. Sixty percent of the current population are transhumant pastoralists (nomads), making Somalia one of the few countries in the world (Mauritania is another) in which pastoralists are in the majority -- a factor which must be continually kept in mind. This 60 percent estimate does not include settled farmers along the Shabelli and elsewhere in the country who send kin off to herd cattle and other stock away from the villages during the rainy season.

In spite of their importance to large numbers of Somali, the rangelands not only have low productivity but they are deteriorating (indeed, the possible influx during 1980 of refugees with several million stock presumably has sped up the pace of deterioration). The World Bank mission therefore concluded that the number of stock and people on the range should not be increased during the foreseeable future. That means an increment of approximately one million transhumant pastoralists over the next twenty years need be absorbed off the range in settlement agriculture, fisheries, and nonfarm employment. At the same time an expected .5 to .7 million increase in the settled rural population need be similarly absorbed during the same time period.

While I believe that the World Bank has underestimated the potential of nonfarm employment in rural areas to absorb part of this 1.5 to 1.7 million people, nonetheless their assumption that the large majority must be absorbed in rural areas as opposed to the urban sector

makes sense, as does their estimate that the greatest number must be absorbed in rainfed agriculture. This would require a major land settlement program. Briefly, the Bank notes that by increasing the current 540,000 hectares under rainfed agriculture by another 750,000, 825,000 additional people could be absorbed. As for irrigation, the Bank estimates that a further 325,000 people could be absorbed through rehabilitation and intensification of production in existing irrigated lands, and extension of those lands from 50,000 hectares irrigated to 135,000 hectares. That leaves 350,000 to 550,000 people to be absorbed in coastal fisheries and in nonfarm employment in both rural and urban areas. A significant proportion of that number the Bank believes must be absorbed in fisheries, which again would involve resettlement.

In sum, the Bank is pointing up the need for a settlement program involving over one million people. That is a massive program by any standard. And it does not involve a single refugee.

B. ASSUMPTION TWO

Most refugees who remain in Somalia permanently must also be absorbed in settlements which are based on agriculture. Since their numbers increase still further the pressure on Somalia's resources, a political solution which allows the large majority to return to their homelands is in the interest of the Somali government, the Somali host population, and the refugees themselves. In spite of this, a situation need be anticipated whereby large numbers of refugees will eventually have to be settled within Somalia.

C. ASSUMPTION THREE

A settlement program which deals only with refugees -- as opposed to hosts and refugees, or hosts alone -- does not make sense from either an economic or sociopolitical point of view. Since the host population must be included, and since the need for a national settlement program is far greater in the long term than the need for a refugee settlement program, donors should be encouraged to contribute funds which are available for the settlement of both hosts and refugees rather than the latter alone. What is needed is a massive but carefully phased development program for the rural areas which uses agricultural settlement as a catalyst to initiate a broad based process of integrated area development. Starting with agriculture (which is here defined as including the integration of crop, livestock, forestry, and fisheries components), this process also anticipates the creation of nonfarm employment and of a hierarchy of settlements, including regional centers and townships, in what are currently rural areas. Anything short of such an approach will not address the major issues involved in Somali development.

D. ASSUMPTION FOUR

The planning, implementation, and management of government sponsored settlements is an incredibly complex process which attempts to achieve not only new physical settlements but new production systems imbedded in a socially satisfying way of life for the settlers. Though it can be sped up, this process takes time, since each settlement needs to proceed through a series of developmental stages before it can be

considered self-sustaining. Government agencies and donors tend to have unrealistic expectations of the rapidity with which acceptable rates of return can be realized. On the other hand, they also tend to underestimate the long-term benefits, both direct and indirect, of successful settlement projects in terms of farm and nonfarm production, employment generation, and higher standards of living. With patient and careful planning, implementation, and management there is considerable evidence to suggest that higher rates of return than expected can be achieved over the long term (here defined as the next twenty years).

Though settlement creation is complicated, a basic assumption of this report is that settlement projects tend to be characterized by a range of basic issues and problems about which there is considerable international experience. The major basic issues at the various stages are known -- and because they are known they can be anticipated and dealt with in advance. The same applies to a wide range of problems which have caused the failure of innumerable settlement projects in the past. Some of these issues and problems will be dealt with in subsequent sections of this report. Although they relate to a large extent to settlement areas in other countries, the nature of settlement projects as a particular type of developmental intervention, and the frequency with which the same problems occur time and again, suggests that the global experience with new lands settlement is applicable to Somalia. In my analysis, I will be drawing in part on Egypt's experience with state farms, as well as on the experience of a number of other African countries with the settlement of semi-arid lands. The Somali experience with the settlement of drought-stricken nomads since

the mid-1970s will also be assessed. During my brief visit to Somalia (March 22 to April 1), I was able to visit Kurtunwarey, El Ahmed, and Brava settlements. I also read several evaluatory reports (of which the December 1979 evaluation of Kurtunwarey and Sablaale settlements by the Technical Department of the State Planning Commission and the 1980 preliminary review and summary of the Whitefish Authority's Study of the Coastal Settlements were especially useful) and discussed the settlement experience with Somali and expatriate officials in Mogadishu and in the field. Though the amount of data available for evaluation is still relatively meager, it is sufficient to convince me that the lessons of experience with settlement elsewhere are equally applicable to Somalia.

E. ASSUMPTION FIVE

Although the current refugee camps vary in their suitability for permanent large-scale settlement, in general present sites are not suitable for a variety of reasons. These include (1) presence of a significant host population who are already utilizing most of the best land, (2) inadequate suitable lands in the vicinity, and (3) inadequate water supplies for domestic and agricultural use. If this assumption is correct -- and it is based on the opinions of a number of knowledgeable people to whom I talked in Mogadishu and in the field -- then any permanent settlement of large numbers of refugees will require resettlement elsewhere.

In the meantime, a major effort should be made to increase food production, relevant job training, and employment in the refugee camps. Aside from this section, I will not deal further with this important

topic because it is being dealt with in a complementary report by my colleagues H. Lewis and B. Wisner of the University of Wisconsin. Whatever short-term program is initiated in agriculture should be sustainable over the long term. Lewis and Wisner have already suggested that more should be learned about the background of refugees, including their former economic activities and skills. In Lewis' words, "It is our strong impression that a short period of direct observation and participation in camp life by a social scientist (or several such inquiries) can pay considerable dividends in helping to avoid serious errors and, more positively, to offer suggestions and insights regarding interventions." I agree. A significant minority of the refugees are farmers with previous experience with animal-traction and other techniques of relevance to increasing agricultural production in Somalia. These skills should be utilized by selecting refugees who have them not just to participate in camp agricultural projects but also to demonstrate the techniques utilized to other refugees and to the host population.

F. ASSUMPTION SIX

Regardless of the extent to which it involves both refugees and hosts, expansion of the cultivated area over the next twenty years through the formation of new settlements based on rainfed and irrigated agriculture should occur at a relatively slow rate during the initial years. Appropriate surveys and studies need to be completed, viable prototypes need to be developed which can be replicated elsewhere, appropriate organizational structures need to be created, and staff need

to be trained. Since these tasks are essential and they take time, a crash program for the settlement of new areas can be expected to fail. According to the scenario presented in the World Bank's Agricultural Sector Review of the new agricultural areas to be opened during the next twenty years, 5 percent would be placed under cultivation by 1985, another 25 percent by 1990, another 30 percent by 1995, and the final 40 percent by the year 2000. Even this reasonable projection may not be realized granted the magnitude of the settlement task.

G. ASSUMPTION SEVEN

A major program of permanent refugee settlement and development will not be approved by the government in the short term. Granted the magnitude of the problems associated with development for its rural citizens and the possibility of a political solution to the refugee problem, it seems unlikely that the government will soon permit a massive program for permanently resettling the refugees. On the other hand, the possibility exists that a significant number of refugees eventually will have to be permanently resettled. Rather than await that day, it makes sense for the major donors to prepare for it by helping to fund necessary surveys now, by helping to establish the initial settlement prototypes now, and by helping to rehabilitate the existing settlements for drought-stricken nomads. Even if most refugees are able to return to their homelands in the future, the funding of the above activities are indispensable for coping with Somalia's own rural development crisis. It would be a short sighted policy indeed to tie donor funds narrowly to the current refugee population. There are all

types of "refugees" in this world besides political refugees. If Somalia's rangelands continue to deteriorate and its agricultural sector continues to stagnate, large numbers of new "drought refugees" can be expected in the future.

II. THE PROSPECTS FOR SUCCESS FOR A LARGE SCALE SETTLEMENT PROGRAM IN SOMALIA

The basic conclusion of this report is that Somalia must evolve strategies for designing, implementing, and managing many settlement areas throughout the country if it is to solve the problems of its growing population and of those refugees who eventually become permanent residents. These settlement areas must be primarily for the host population, for there are no new lands in Somalia which are not utilized in one way or another by transhumant pastoralists whose customary use rights can hardly be ignored by planners without serious repercussions. On the other hand, experiments might be initiated now for more permanently incorporating a small number of carefully selected refugees (selected in terms of both agricultural and other skills, desire to remain in Somalia, and unlikelihood of being able to return to their villages of origin) within host-oriented new settlement prototypes away from existing camps so as to gain experience with refugee settlement in the event that a larger settlement program becomes necessary in the future.

Given the above conclusion, is there a reasonable chance for success granted the magnitude of the crisis, the extraordinary number of people involved proportionate to the total population of Somalia, and the absence of proven development policies which can be implemented?

The answer, I believe, is yes -- but only if close attention is paid to a very wide range of variables relating to planning, implementation, management, and settler participation in management. These variables relate to five categories which will be briefly outlined below. They also relate to the capacity of the government and the donors to learn from Somalia's past experience with settlement projects, especially in regard to settlements for drought-stricken nomads who were settled in the mid-1970s under the auspices of the Settlement Development Agency (SDA) and the Coastal Development Project (CDP).

A. LAND

According to the source material considered by the World Bank team during its 1980 agricultural sector review, suitable land is available for an additional 750,000 hectares of rainfed agriculture by the year 2000. According to the Bank report, "there are at least 2 million hectares of land with good quality soils in rainfall zones that could support a farming system similar to that presently practiced in cultivated areas." This land tends to be isolated from settled areas, so that its cultivation "would require thorough land use planning, extensive investments in infrastructure, particularly access roads and domestic water supply." In other words, these areas would have to be developed essentially from scratch, a task which requires very careful feasibility studies during the initial stage of planning design. Especially crucial are suitable soil surveys, the absence of which time and again have been documented as a major cause for failure of new lands settlements throughout the world.

There is also additional land available for irrigation along the Shabelli, although there the major problem is the availability and quality of water throughout the year and from one year to another. If all the land designated in government plans for irrigation along the Shabelli was placed under command there would be insufficient water to go around. This is one reason why the authors of the State Planning Commission's 1979 report on Kurtunwarey and Sablaale settlements recommend that only 1,500 ha be irrigated on each scheme rather than the much larger hectarages which were originally designated for irrigation. Should ambitious plans be suggested for irrigation at Jalalaqsi, for example, for hosts and refugees alike, the availability of Shabelli water needs to be assessed against competing down- and upstream demands. Again, properly timed soil surveys are crucial. This is especially the case along the Juba where land suitable for irrigation tends to be less available.

Soil surveys were neglected in connection with both the Kurtunwarey and Sablaale settlements, in both of which salinity currently is a problem. At Dujuma on the Juba River -- which was the largest of the SDA's three settlements -- the soils proved so inadequate that the settlement first had to be shifted to another locale. More recently, it may have been closed down entirely as a separate irrigation project, with the settlers employed instead as plantation laborers. As this brief historical review shows, there is no substitute for adequate soil surveys in connection with settlement planning.

Though, again, careful surveys (though of a different sort) are necessary, the consensus is also that there are suitable areas along the

coast for siting new fishing communities to tap an estimated 100,000 tons/annum of marine resources available for utilization by the small-scale (artisanal) fishery. Hundreds of years old, coastal communities like Brava are said to have declined in recent years along with the dhow trade to India and southern ports along the east and central African coast. With careful planning, not only can these communities regain their former prosperity, but new communities can be created to exploit the fishery potential (which also includes perhaps another 100,000 tons/annum accessible to deep water fishing).

B. WATER

Water for domestic consumption, livestock, and irrigation is definitely more of a constraint in many areas than land. Current water shortages for irrigation are so severe along the Shabelli that the authors of the World Bank Agricultural Sector Review recommend that a major expansion of irrigation schemes be immediately terminated, a recommendation which again suggests that the refugee camps of Jalalaqsi and Sigalow (and other sites in the Belet Uen area) are not appropriate spots for the permanent settlement of refugees. As for the Juba, here the water requirements for committed projects also exceed the flow of the unregulated river -- again pointing up the need for integrated river basin development planning. Elsewhere in the country, groundwater resources appear to be unevenly distributed. I use the word "appear" because little is known about Somalia's deep aquifers. Apparently there has been little follow-up on the recommendations of the UNDP-funded groundwater survey in the mid-1970s, although the current AID project

should help correct for current knowledge deficiencies. In spite of the inadequate data base in regard to rainfall records, gauging of river flows, and groundwater survey, the 1980 World Bank team nonetheless concludes that available evidence suggests that water is where it is needed to develop rainfed agriculture.

C. LOCAL PRODUCTION SYSTEMS AND THE SOMALI PEOPLE

Somalia is exceedingly fortunate in having an homogenous and enterprising population with a history for seeking out a wide range of economic activities. Though the majority of the people continue to be nomads, it is important to keep in mind that two of the six clan families which make up the large majority of the Somali population are settled farmers who also keep livestock. Furthermore, members of the other four clan families have also settled down as farmers with herds throughout the centuries, so that Somalia is characterized by the same process of voluntary sedentarization of nomads that has occurred over the millennia along the Nile in both Egypt and the Sudan. Not only have some Somali nomads become sedentary farmers along the Juba and Shabelli rivers but they have also settled down over the past century in the northwest where they have taken over a farming system based on animal traction.

The process of voluntary sedentarization should not be viewed as simply a "one way street," however, even though the long-term trend may be clear. Transhumant pastoralists throughout Africa have a proven capacity to shift back and forth between a wide range of activities on both a seasonal and annual basis in response to a wide range of

ecological and other factors. At the height of the drought in the mid-1970s approximately 220,000 Somali nomads sought assistance from twenty relief camps. With the arrival of the Gu rains in the spring of 1975, approximately 120,000 left the camps, with the large majority presumably returning to northern and other parts of the country to rebuild their herds. The remaining 120,000 were settled in the three SDA settlements (105,000) and in a number of CDP fishing settlements along the coast (15,000). That population too has proven to be in flux, with less than 60 percent of the settlers registered in Kurtunwarey in 1976 still present in 1979. Though unfortunately there are no statistics as to the activities undertaken by those who left, some are known to have returned to herding while others have joined the army, and still others have sought wage labor opportunities in Mogadishu, in Saudi Arabia and other oil rich states in the Middle East.

Somalis are resident throughout the eastern third of Africa (Somali truck drivers are immortalized in legends as far south as Zambia) and are employed as sailors. Others are successful local and international traders and merchants, while still others are fishermen in coastal communities like Brava.

The Somali people are the nation's number one resource, a fact that all too often is forgotten by national and international planners alike when they attempt to superimpose imported developmental models on the populace. Since 1969, the government has been committed to a policy of nomad sedentarization to which the authors of the World Bank's Agricultural Sector Review also subscribe (though for ecological and other reasons) for further increases in the nomad population. If

sedentarization works, by the year 2000 the present distribution of population will be radically different -- with one third urban (versus a current 18 percent), one third sedentary rural residents (versus 20 percent), and one third nomadic (versus approximately 60 percent). But even if such goals are achieved, it is unrealistic to expect behavioral patterns, institutions, values, and attitudes associated with the people's long-standing pastoral heritage to vanish during that time span -- nor is it developmentally wise to wish them out of existence.

Livestock represents the major source of Somalia's export earnings (83 percent in 1978) and can be expected to continue to be a major earner of foreign exchange, even with diversification. According to Ian Lewis, government officials at all levels of the administration from the top down "have brothers and cousins living as nomads in the interior and regularly have shares in joint livestock herds. Civil servants regularly invest in livestock, including camels, which are herded by their nomadic kinsmen." Even if a massive settlement program is successfully implemented, it will only utilize part of the current rangelands. For much of the remainder transhumant pastoralism remains the best form of land use.

Somali herdsmen have livestock-oriented preferences and skills which can be built with advantage into the farming systems of the future. Granted a preference for milk (with almost four liters per capita consumed daily if available) and a familiarity with livestock, it makes sense to integrate dairy and beef production, smallstock management and poultry with crop production rather than ignore livestock as has been the case with the crash programs or downplay it as has been

the case with SDA settlements. For all their weaknesses, local systems of land use among Somali farmers and herdsmen are more diversified and flexible than the farming systems introduced by the government on state farms and cooperatives. They probably also are more resilient over the long term.

It also makes sense to assess ways in which Somali social organization can facilitate such government goals as cooperative formation, cooperative farming and livestock management, fishing, and the operation and maintenance of irrigation systems.

D. FARMING AND CROPPING SYSTEMS FOR SOMALIA

1. Farming Systems

The past ten years has seen the development of more potential, higher yielding farming systems for irrigated and rainfed lands in semiarid and savanna lands of the tropics and subtropics. Many of the ingredients already exist in local systems of land and water use. Though irrigation provides more latitude, crucial for rainfed farming systems are a range of crops and cropping techniques fused (in terms of a system of mixed farming) with livestock management (which may well have a transhumant component); a water development and conservation program; a range management program (including tsetse control where necessary); the cultivation of drought-tolerant leguminous trees like Laucaena leucocophala (which provide not just fuel and shade but also fodder for livestock, wood for pulp, and soil improvements); improved seed (especially applicable to maize in Somalia) and insecticides; a unitary extension system (coupled with a veterinary medicine program);

marketing and storage facilities; and an equitable price system and rural-urban terms of trade for the rural producer.

Drawing on comparative material from countries with broadly similar agro-ecological zones, the World Bank's Agricultural Sector Review team assessed a range of production alternatives and technological choices. Under conditions of controlled irrigation, they compared small holder farms with large farms. Summing up the results, the conclusion was that "despite the use of mechanization, of high cost inputs and better access to irrigation water, large scale crop producers do not achieve significantly higher yields than small scale producers except in the case of maize." Moreover, "due to high expenditures for inputs and payment for labor and management, the per hectare cash income and the returns to the economy as a whole generated by these large farms are lower than the combined per ha value of cash income and subsistence on small holder farms under similar conditions. Though such farms may take longer to develop "optimum production standards," they are also much less susceptible to management failure. And while infrastructural investments are higher for small holders because of their need for a denser network of feeder roads and social infrastructure, and because their communities take up land which might otherwise be farmed, "if properly organized small settlers become highly motivated at the prospect of long-term possession of their own farm and tend to invest plenty of unpaid labor and care into their plot which more than counterbalances higher infrastructure costs."

In Somalia, unfortunately, there is virtually no experience with government sponsored settlement projects based on small holder

irrigation. Nonetheless the Bauk team concludes that the competitiveness of small holders elsewhere versus large government farms suggests "that small, owner-operated farms have a considerable development potential." I agree, especially when the option is state farms and when the production record is reviewed of settlement schemes run as state farms in Egypt and Somalia. In both cases the concept of state farms was introduced from without; in both cases local settlers were used as wage laborers; and in both cases the state farms failed to become either economically or socially viable.

a. The Egyptian Experience with State Farm Settlement

Though the alluvial old lands along the Nile and throughout the delta have been cultivated mainly by small and middle scale peasants, the cultivation of desert lands reclaimed since the 1956 revolution was undertaken mainly by state farms. As in Somalia, a disproportionate percentage of public funding for agriculture was put into state farms (ranging from 40 to 60 percent), yet according to the economist Sarah Voll their contribution to agricultural production within Egypt is less than 1 percent.

According to a 1980 review of new lands productivity in Egypt by Pacific Consultants for the U.S. Agency for International Development, state farms are quite inefficient even though they continue to be the dominant new lands farming system — occupying approximately 54 percent of the reclaimed lands. They have the highest losses while yields per hectare in most cases are higher for small scale farmers (cultivating approximately two hectares) than for either state farms or middle class

farmers (cultivating approximately eight to sixteen hectares). Granted this situation, Pacific Consultants favored the recently implemented government policy whereby state farm lands are being gradually handed over to the worker/settlers, and to a smaller number of middle class farmers (in 1980, 35 percent of the reclaimed lands were being cultivated by small holders, 6 percent by middle class farmers, 3 percent by cooperatives, and 2 percent by joint ventures).

As laborers on state farms, worker/settlers had low wages and no incentives to increase production. After state farmland at Tahaddi was turned over to settlers in 1979, within the first year labor inputs improved significantly and weeding became more effective. Elsewhere at Abis and South Tahrir, it has been reported that settlers begin to have a relatively high standard of living after three to five years of farming their own land. During the first few years a substantial share of income goes back into the land as labor and such purchased inputs as manure and subsoil from the flood plains of the Nile. Subsequently the settlers begin to improve their houses, invest in off-farm enterprises, and in a wider range of production goods and services. Net incomes rise, attracting private sector businesses to the settlement, including at Abis doctors as well as butchers and a range of other tradesmen. While constraints still exist, these relate more to government provided inputs than to settler deficiencies. According to the Pacific Consultants report, "The single most important problem, by far, in Tahaddi and in other reclamation projects is the inadequate operation and maintenance of the irrigation system between project entrance and the farm gate." The recommended solution to this problem is not more

government involvement but rather to actively involve the settlers in operation and maintenance activities through the formation of water user associations. While Egyptian settlers are of course experienced irrigation farmers unlike the transhumant pastoralists of Somalia, nonetheless the Somali experience also suggests that greater involvement of settlers in the management of what are now irrigated state farms could result in higher productivity and lower costs.

b. The Somali Experience with State Farm Settlement

Somalia's experience with agricultural settlement schemes relates primarily to the settlements of Kurtunwarey, Sablaale, and Dujuma. All three have been run as state farms with the settlers providing the labor force. Established in 1975 for drought-stricken nomads, Kurtunwarey and Sablaale were established on the Shabelli River for up to 30,000 settlers each, with Dujuma on the Juba River for 50,000 settlers. All sources are agreed that the establishment of these three settlements as relief camps was carried out efficiently and effectively by the Settlement Development Agency and collaborating organizations. On the other hand, the SDA has been unable to transform a successful relief operation into a successful development program. Dujuma has closed down as a state farm and neither Kurtunwarey nor Sablaale have reached self-sufficiency after nearly six years, with recurrent expenditures running ahead of gross income from sale of produce.

As outlined by the State Planning Commission's 1979 report, problems are many, including the absence of incentives for the settlers. Though the authors of this report felt that Sablaale was relatively

close to achieving self-sufficiency, the World Bank team was less optimistic, noting little evidence that the goal of self-sufficiency could be achieved. Settlers were leaving both Kurtunwarey and Sablaale in considerable numbers, the Kurtunwarey population having dropped to less than 18,000 in recent years, with the remaining population containing far more adult women than men, and more children than adults. Hence in 1979, there were only 756 men in the 31-45 age group versus 1,926 women for a sex ratio of .39 man for every woman. Children fourteen and younger made up 52 percent of the total population, while those between the ages of six through 14 were 40 percent of the total, presumably because the scheme was attracting school age children because of its better than average educational facilities while it was losing adult males to other economic opportunities and to the army.

With no return yet for capital expenditures which totaled over 60 million Somali shillings for both Kurtunwarey and Sablaale through 1979 (with cost of permanent housing still to be added), and with recurrent expenditures exceeding income, clearly Somalia's agricultural settlement schemes are not economically viable. The same goes for the fisheries settlements run by the Coastal Development Project, where recurrent costs exceed income to even a greater extent. The SDA settlements are run as state farms and the CDP ones as cooperatives, indicating that the Somali government has still to come up with a viable farming and management system for large-scale land settlement in spite of the fact that a disproportionate amount of resources available for rural development went into SDA and CDA settlement implementation.

Clearly the logical alternative is to follow the World Bank's lead by placing more emphasis on small-scale producer operated farming systems, the development of which is facilitated by government assistance covering a wide range of inputs.

2. Cropping Systems

As for irrigated cropping systems for small holders cultivating four to five hectares, the World Bank team concluded that systems based on rice, groundnuts, and cotton has a higher potential than those based on sesame and maize. While cotton and sesame had the best long-term market and price prospects, maize and rice production should be expanded until national self-sufficiency is achieved. As for rainfed cropping systems, the Bank team projected large scale mechanized farming of drylands as being economically and ecologically unsuitable for Somalia. Instead they restricted their analysis to a cropping system based on sorghum/pulses, with animal husbandry a complementary component. Opportunities for such a production system, which must continue to support large numbers of Somali people in the future, "are limited to gradual expansion of existing cropping and farming systems through introduction of labor saving techniques such as animal traction which would allow an expansion of the cultivated area on the farm" and would provide greater yields per unit of labor. Though animal traction is not commonly used in Somalia, experiments currently under way in the Bay Region are encouraging. Furthermore, Somali farmers west of Hargeisa in the northwest have been using ox (and more recently camel) traction for years while a significant minority of refugees in the camps are Oromo

and others whose village-of-origin farming systems are based on ox traction.

E. GOVERNMENT POLICIES

The most problematic set of variables concerning the possibility of designing and implementing viable settlement projects for Somali citizens and refugees relates to government policies relating to the organization and management of settlement areas. If they are organized as state farms or as state-run cooperatives in which the settlers have little managerial responsibility and in which their role is seen primarily as wage laborers, they can be expected to fail no matter how many millions of dollars are poured into them. Fortunately this view is not just that of expatriate experts, since there is ample evidence that a significant number of Somali government officials are aware that current policies are not working in the farming and fishing settlements and in the rural sector as a whole. There is also evidence that this awareness is slowly manifesting itself in policy changes which are intended to provide more incentive to the private sector, including small-scale farmers. Some of the more recent examples are the following:

[1] During March 1981 a policy decision was made and implemented to eliminate several government (parastatal) organizations with major marketing functions in order to make way for greater private sector involvement in trade.

[2] During the 1981 Gu season at Kurtunwarey, the SDA is planning to set aside one 400 hectare plot for cultivation by 400

carefully selected families. Rather than individual plots being allocated to each family for family cultivation, a ten-family unit will be expected to cooperatively farm a ten hectare block in which they would be expected to take a longer term interest. Though it is not clear whether or not they will obtain a return on whatever surplus (beyond their subsistence needs) is sold through the Agricultural Development Corporation (ADC), symbolically this is an important first step away from settlers being treated only as government workers with no established interest in particular plots of land. Should this "pilot project" work out in practice, the intention is to extend it to additional 400 hectare plots in the future.

[3] In the fisheries cooperatives (but not necessarily those run by the SDP), serious consideration is being given to decentralize the government dominated structure by selling boats and fishing gear to the members of individual cooperatives who hence forward would be responsible for their replacement. Up until the present, there has been little incentive for cooperative members to use carefully properly maintained equipment since damaged boats and torn nets were routinely replaced by the cooperative which was a government agency rather than a organization of fishermen.

[4] In the refugee settlements the central policy decision has been made to allow a minority of refugees to cultivate irrigated family plots of 1/2 ha this Gu season and to consume/market the harvest. Should this experiment work, the intention of government is to extend it to whatever land is available, although refugees would not be allowed to cultivate the same plot in successive years (this being a mechanism to

keep them from viewing the land in question as "their own").

According to a number of sources, the current trend toward more local participation on the part of farmers/herdsmen/fishermen and more scope for the private sector in general is more pronounced than in the past, although there are also counter trends at work which may, for example, cause the cooperative movement to become more hierarchically organized and centrally controlled. Furthermore, except for the first, all the examples listed relate to intentions which had yet to be implemented at the time of my visit. In regard to the second, sufficient seed had not been received at the time of my visit to initiate cultivation on the first 400 hectare block even though the first heavy spring (Gu) rains had arrived, hence eliminating the possibility of early planting. In regard to the fourth, at Jalalaqsi cultivation had also yet to be initiated by refugees even though the host population had already begun planting, hence jeopardizing future yields there also.

Even if implemented, the above examples do not indicate that the government is prepared to make the major changes that are necessary to revitalize the rural sector. Producer prices, for example, for a range of crops are well below world market prices, hence creating a disincentive for farmers to produce. Nonetheless, policy changes are being made which have important implications for the future. They warrant careful monitoring and encouragement where appropriate.

III. THE PLANNING, IMPLEMENTATION, AND MANAGEMENT OF VIABLE SETTLEMENT PROJECTS

The purpose of this section is to touch on a number of topics relating to settlement creation which have special relevance to Somalia. Though presented in the form of generalizations, they are generalizations backed up by analysis by myself and others of a large number of settlement areas in the tropics and subtropics, including settlement areas in over fifteen African countries.

A. THE SCOPE OF SETTLEMENT PROJECTS

If settlement projects are to catalyze a process of integrated area development designed to raise productivity, living standards, and employment they must not be planned as narrowly conceived agricultural production schemes that focus on a small number of crops for either domestic consumption or export or both. Rather to absorb the current population growth in the country, not to mention whatever refugees eventually become permanent residents, settlements must attempt to facilitate a broad based process of integrated area development which includes the generation of both farm and nonfarm employment, the development of existing regional centers and townships, and (in remote underdeveloped areas) the creation of new regional centers and townships. If this scope is accepted, careful regional planning becomes crucial, both in regard to the sequencing of particular settlement areas in relationship to one another and in regard to the sequencing of infrastructure within individual settlement areas. As an example, before any plan is made to develop the Jalalaqsi area as a discreet project, this area should be assessed in relationship to the Shabelli

River basin and interbasin areas as a whole, and especially in regard to the optimal use of Shabelli river flow.

I stress planning, because in the past the Somali government has launched ambitious settlement projects without careful planning, with the result that overambitious and unrealistic plans subsequently have had to be scaled back. Kurtunwarey and Sablaale are a case in point. Originally it was planned to put 18,000 hectares under irrigation on each scheme, but subsequently that goal had to be radically curtailed to 3,000 ha apiece. Still more recently, the Technical Department of the State Planning Commission has recommended a further scaleback to 1,500 ha at each location.

B. THE NEED FOR FARMING SYSTEM DIVERSIFICATION

Under farming system diversification, special attention in Somalia need be paid to the integration of the crop and livestock components of the farming systems. There are several reasons for this. First, diversified systems, if properly operated, are more resilient and self-sufficient. Second, the different components can reinforce each other, leading to higher productivity. A case in point relates to animal traction, the use of animal manure, and the use of crop residues like maize and sorghum stalks and rice straw, of sesame seed cake, and of green manure crops for supplemental feed for stock. Third, diversified farming systems provide a more adequate and varied diet for the nonfarm community in adjacent regional centers and townships and for local agroprocessing industries (grinding and oil mills, rural slaughterhouses, fruit and vegetable processing units, etc.). Fourth,

existing farming systems within Somalia are based on the integration of both crop and livestock components. Fifth, diversified farming systems make better use of family labor both by spreading labor demand throughout the annual cycle(s) and by enabling husband and wife, and children and other dependents, to participate in activities which not only utilize their different capabilities but also provide different family members with a cash income and the status which goes along with making a contribution to the family estate.

One of the weaknesses of the government's Agricultural Settlement and Crash Programs (both of which come under the Bureau of the Somali Revolutionary Socialist Party) is that neither have effectively integrated the cropping component with the livestock component. On the crash programs, there is no livestock production at all. On the Kurtunwarey and Sablaale settlement projects, the relatively small livestock component on the two state farms was kept separate to the extent that no manure from the cattle pens was used to fertilize the fields while only recently have crop residues been used as supplemental feed at night (though there are no facilities for chopping or storage of crop residues). Though this separation of activities, along with the small scale of the livestock component, may be part of a strategy to wean the settlers away from livestock, there is little evidence to suggest that this strategy is either working or desirable. Indeed, according to the 1979 evaluation of the State Planning Commission, "Successful development of, and settlement of nomads in, the Lower Shabelli area will inevitably involve integration of crop and livestock farming and this justifies maximum development of livestock

enterprises within the existing constraints." Such a statement is equally applicable to livestock development in connection with any future settlement projects throughout the country, especially in regard to rainfed farming systems.

C. FAMILY INCOME

As far as settler well-being and incentives are concerned, the key variable would appear to be net family income. In the history of settlement projects around the world, far too little attention has been paid to net family income in comparison to such other important variables as crop productivity under various technical inputs and size of the farm holding. Settlers need an incentive to produce and net family income is the best measure of returns to the farm family. As such, it is based not just on producer prices, but also on the size of the family holding and the costs of essential inputs (especially improved seed and pesticides).

Before a major settlement program is implemented in Somalia, more attention should be paid as to desirable income levels for small-scale farmers. Though a minimal goal would be a net income which is high enough to provide self-sufficiency when combined with off-farm family activities, the realization of only that goal will have a dampening effect on the generation of nonfarm employment, and hence on the absorption of rural labor outside of farming. Unfortunately, comparatively little is known about the indirect benefits in terms of linkages that arise from increases in small holder production and net incomes. Social cost-benefit analyses tend to ignore such indirect

benefits, which is one reason why the longer term multiplier effects of successful agricultural settlement projects tend to be underestimated. Nonetheless, what little evidence is available for relatively low income producers elsewhere suggests that as farm incomes rise, consumption of a range of production-oriented and consumption-oriented goods and services is a major value added component, exceeding, for example, the value added from agricultural processing. On the one hand, a widening range of inputs are purchased for the family farm; on the other hand, a wide range of goods and services are purchased to elevate the family standard of living through upgrading housing, and the purchase of home furnishing, of clothing, and of foodstuffs. The provision and servicing of such products provide jobs in rural areas as well as making them more attractive places to live.

One reason why the World Bank's Agricultural Sector Review downplayed nonfarm rural employment may have been the belief of team members that it is unrealistic to expect future net incomes of low income farmers to provide for more than minimum subsistence needs. While that possibility exists, too little is currently known about rural Somali consumption patterns and about what goods and services are currently available in rural areas. According to the 1979 report of the Somalia-National Workshop on Rural Development, of 6,449 rurally based industrial establishments surveyed in 1974, 6,059 (94 percent) employed less than five workers. In other words, rural industries were essentially small-scale industries. Food processing accounted for 2,503 industries (41 percent) while "pottery, leather and footwear, handloom weaving, tailoring, metal goods and ornament-making are also largely

undertaken. Locally available raw materials are commonly used."

Approximately 2-3 percent of the country's labor force was "employed in rural industries and there is considerable scope for future expansion."

Whether or not there is considerable scope for future expansion at current and expected income levels is, of course, the critical question. Two to three percent of the labor force is a relatively small proportion and presumably is directly correlated with the low buying power of the other rural residents, which in turn may explain the paucity of consumer goods and services observed by the World Bank team in the rural areas. While current net incomes presumably are too low to provide for much demand for consumer goods and services, there is considerable room for increasing farm production in both irrigated and rainfed agriculture. The possibility that those increases can significantly increase nonfarm employment should not be neglected in planning for the future.

D. PRODUCER PRICES AND RURAL-URBAN TERMS OF TRADE

In most countries of the tropics and subtropics, rural-urban terms of trade favor the urban consumer at the expense of the rural producer. The situation is similar in Somalia.

According to the World Bank, agricultural terms of trade have been deteriorating in Somalia since the early 1970s, hence providing a disincentive for farmers to produce for the market. While producer prices have actually declined in real terms, the cost of inputs has increased. Unless more favorable terms of trade are created, current and future settlement projects have little chance of becoming viable.

E. THE NEED FOR SETTLER PARTICIPATION

Evidence that Somalia can realize higher economic returns through facilitating the development of small-scale farmers rather than through investment in large government farms has already been presented. Though the government need take the initiative in institutionalizing a policy of area development based on settlement projects, a very strong argument can be presented that small-scale farmers should be the center stone of that policy. This is not just because they are the principal risktakers. It is also because evidence is increasing that their active involvement in project planning, implementation, management, and evaluation raises the chances for success. How farmers and other settlers are to participate will depend to a large extent on government ideology. Though most communication relating to production and management decisions in the SDA farm settlements and the CDP fishing settlements is top down, with the result that there is very little active settler participation in production activities, surely this approach is not mandated by the concept of Scientific Socialism. And if this is so, it should be possible to develop a cooperative system which facilitates the achievement of government ideological goals, on the one hand, and settler initiative and participation, on the other.

At Kurtunwarey, secondary canals serve 24 to 34 hectare blocks. Such a technical layout is very suitable for the development of settler water user associations. Initially such associations could be responsible for operation and maintenance (O and M) of the irrigation system, with associations at the secondary canal level "federated" to deal with O and M not only for 400 hectare blocks, but also for the

irrigation system as a whole. In time, cooperative functions like credit might be added, the key to success, however, being the evolution of the association as one which the settlers see as "their own." At the fishing settlements similar local level cooperation could be organized around individual boats and clusters of boats. While it is true that both types of settlements have an elaborate organization which fuses ten family units into ascending units of 50, 100, 200, and 400 families, this relatively formal hierarchical and centralized organization was superimposed upon the settlers by the settlement administration. Especially in the fisheries settlements, but also to a major extent in the agricultural ones, it is concerned with administrative rather than production functions.

F. INCORPORATION OF THE HOST POPULATION

The world over host populations tend to be ignored when settlement projects are established within their customary use areas. Not only does this situation cause unnecessary conflict and social disequities but it also fails to incorporate the experience and skills of the host population into the development process. In Somalia the tendency to ignore the host population also exists. At Kurtunwarey, at least some host villages within the boundaries of the new scheme were told to leave. When they refused, they were subsequently incorporated, although they continue to be treated as second-class citizens in regard to the provision of potable water and social infrastructure. And whereas the settlers initially were made destitute by the drought, in the case of the hosts their lands within the project were nationalized

and taken away by the government, with their former self-sufficiency replaced by a dependency on wage labor and rations.

At Brava and other fishing settlements, the host population has been virtually ignored except for some fishermen who have been hired in place of an extension staff. As for the refugee settlements, at Sigalow in the Belet Uen complex a small host village immediately upriver from the refugee camp continues to draw muddy water from the river while the refugees have access to a much improved supply of potable water. While incorporation of the host population inevitably increases the short-term financial costs of the settlement process, in the long run it makes economic, social, and political sense. Fortunately, current policy of the government is to incorporate the host population to a greater extent than in the past. Hence at Kurtunwarey I was told by at least one knowledgeable person that a small proportion of the newly built 400 permanent homes would be allocated to hosts, while at Jalalaqsi up to 10 percent of the irrigated holdings to be brought under cultivation in a 400 hectare pilot block are supposed to be allocated to hosts.

While the Somali government appears increasingly aware of the need to incorporate the host population to an extent in project design, looking to the future the danger is that donors may restrict their aid to refugees alone. Such a policy would be in the interests of no one.

G. THE RELATIONSHIP BETWEEN ECONOMIC SUPPORT SYSTEMS, SOCIAL SERVICES, AND HOUSING WITHIN SETTLEMENT AREAS

While all three are important, social services and improved housing are not cost effective if the settlement area is not economically viable. The global experience, including that of the SDA

and CDP settlements of Somalia, show that improved social services in the form of school and medical services are the most easily provided. Indeed, one of the main national benefits of settlement projects is a relatively high-grade educational system. All too frequently, however, this turns out graduates who do not wish to remain on the settlement in either farming or nonfarm occupations. As for housing, the global experience is that this is best provided by the settlers themselves -- first as temporary housing and then as their incomes rise as permanent housing in the design and construction of which varying degrees of government assistance can be provided. Against this background, it is unlikely that the type of improved housing provided by AID at Kurtunwarey should be replicated in other settlement areas. Homestead plots are also too small, hence interfering with farming system diversification since available space is insufficient to allow for the women to raise chickens and small stock and to plant vegetables and fruit trees (while the SDA does not approve of smallstock being kept within the courtyard, the 1979 report of the State Planning Commission suggests that settler-reared goats could provide an important source of family income; it also suggests that poultry raising may be a more appropriate household than state farm activity).

In sum, first priority should be given to making new settlements economically viable as communities, with social services given second priority and housing third priority.

H. THE PHASING OF INFRASTRUCTURE

A common failing of settlement agencies is their attempt to provide "instant" infrastructure from scratch. Not only is this financially very expensive, but frequently the quality of the items provided suffers. A far better strategy is to carefully phase through time the introduction of infrastructure for both settlers and administrators. This is especially important in poorer countries like Somalia. Though the optimal phasing will vary from one situation to another, generally speaking access roads and potable water supplies should be present when the settlers arrive.

I. SPONTANEOUS VERSUS GOVERNMENT SPONSORED SETTLERS

Generally speaking the global experience is for spontaneous settlers to make better farmers in less time at less cost than government sponsored settlers. As applied to Somalia the lesson here would suggest that a strategy which encourages spontaneous sedentarization of nomads in areas carefully selected and prepared by the government might well make the most sense. Selection here refers to the execution of careful soil and water surveys, as well as surveys dealing with customary land use rights so that first priority can be given to the host population that has used the land in the past. Preparation refers to a "site and service" approach whereby government provides access roads, water supplies for people and livestock, and a range of services such as research-backed extension and credit designed to encourage the shift from transhumant pastoralism to a mixed farming system.

J. REHABILITATION OF EXISTING SETTLEMENTS

Considerable emphasis is currently being given by the World Bank and other development agencies, including U.S. AID, to the rehabilitation of irrigation based settlement schemes in Africa and Asia. In the Sudan, the World Bank is currently involved in the rehabilitation of the large-scale New Halfa Project, while World Bank feasibility studies are currently under way on the Sudan's Gezira Project -- still by far the largest irrigation project in the tropics and subtropics under a single administration. In Sri Lanka, AID is currently involved in the rehabilitation of the large-scale Gal Oya Project, while Pacific Consultants, on an AID funded contract, has recommended that rehabilitation of new lands settlements in Egypt take priority over the initiation of new desert reclamation projects.

In Somalia, a number of studies have been critical of the SDA and CDP settlements as presently designed and managed. Among other criticisms are the following:

[1] Neither type of settlement is economically viable, with recurrent costs still exceeding annual income in all cases.

[2] The current management systems have serious limitations.

[3] Settlers on the agricultural settlements are little more than wage laborers on state farms, while those on fishing settlements are little more than employees of the cooperative. In both cases, there are inadequate incentives for either farmers or fishermen to increase their productivity.

[4] There is virtually no effective local participation in either type of settlement with management and production decisions

passed from the top down. Though an experiment is to be launched at Kurtunwarey during the current Gu season whereby groups of ten families will communally cultivate ten hectare plots on a 400 hectare pilot scheme, settlers have had virtually no input into the design of this system nor have they been organized into water user associations or other participatory and settler-run organizations involved in the operation and maintenance of the irrigation system and cattle and poultry units. As for the fishing cooperatives, they are government organizations to which fishermen belong. The management and committee structure continues to be dominated by government employees and is more oriented toward administrative details than fisheries production. Fishermen have little responsibility for their boats or gear; when damaged they are replaced by the cooperative.

[5] Extension is totally inadequate. What extension is available on the agricultural settlements is not backed up by research, with quite different drug regimes used, for example, for cattle at Kurtunwarey and Sablaale for reasons which are unknown. The Coast Development Project has no extension program aside from that provided by an ongoing FAO project, various other technical assistance programs, and a few fishermen hired from among the hosts -- who are good at what they do but have not had much experience on the types of gear used by the CDP.

[6] The host population living outside both types of settlements are virtually ignored, while those incorporated within the agricultural settlements have lost their land, their flexibility, and their independence.

[7] On the agricultural settlements, little attempt has been made to integrate cropping with livestock production. In effect, the SDA farming system is less dynamic and has less potential for development than do those of Somali small holders who practice systems of mixed farming.

Rehabilitation undertaken against this background should also attempt to evolve a settlement model which is applicable for the future voluntary sedentarization of nomads and for whatever refugees may be eventually absorbed as permanent residents of Somalia. Though the population of both Kurtunwarey and Sablaale has been dropping over the years, the current population still exceeds the carrying capacity of the settlement in terms of lands available for irrigation, rainfed farming, and livestock management. For this reason, any attempt to settle refugees at Kurtunwarey or Sablaale might worsen an already complicated situation.

IV. GENERAL RECOMMENDATIONS FOR U.S. AID

The following recommendations are very general since they are germane to a twenty-year time span. They do not include recommendations to be implemented now in the refugee camps since these will be covered in the separate University of Wisconsin report of Dr. H. Lewis and Dr. B. Wisner.

[1] AID should attempt to fit its refugee and development assistance into an overall Somali-multidonor strategy designed to facilitate the rural development of Somalia through the type of program recommended by the World Bank in its Agricultural Sector Review.

Rehabilitation of existing irrigation areas, further carefully controlled and planned irrigation, and the development of both old and new rainfed areas is at the heart of this strategy which envisions a massive settlement program over the next twenty years. In the long run, a rigid separation of refugee aid from development aid will probably prove to be a very shortsighted policy.

[2] Funds allocated for refugee development (as opposed to relief) should include host communities wherever possible. Funds restricted to just refugee development can be expected in the long run to reap a bitter harvest of host-refugee conflict such as is endemic to settlement projects the world over in cases where the host population is ignored.

[3] If so requested by the government of Somalia, AID should seriously consider providing assistance for establishing two settlement prototypes oriented toward small-scale farmer operators. One prototype would relate to irrigated farming systems while the other would relate to rainfed cultivation. Both should be designed and implemented in such a way that they are replicable. While both are crucial, the rainfed prototype is the most challenging since it requires a greater degree of experimentation -- both with "site and services" approaches and with farming systems that link sedentarization with an ongoing component of transhumant pastoralism.

[4] If so requested by the government of Somalia, AID should seriously consider allocating funds for the rehabilitation of the existing SDA and CDP settlements. To date a major investment of time,

capital, and personnel have gone into these settlements. Rehabilitation would not only attempt to make them economically and socially viable but would also use them as "pilot projects" to test out options for the future settlement of nomads and whatever refugees become permanent residents of Somalia.