SOCIAL ANALYSIS AND PROGRAM RECOMMENDATIONS: MADAGASCAR CDSS UPDATE

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INTRODUCTION

The information in this paper is based on key interviews carried out in Madagascar and on written sources. Since the previous CDSS, the results of a few new studies are available which provide a better understanding of the current social conditions in Madagascar. Also, the social analyst has had the opportunity to review previous studies which were not available to the FY 1986 CDSS team. Nevertheless, numerous other field studies, such as those carried out by the Department of Development Research of the Center for Agricultural and Rural Research (FOFIFA) and pre-1975 materials have not been due to time and accessibility. Also, time constraints have prevented the inclusion of an analysis of key institutions. Information on government institutions is available in several documents such as World Bank reports, the UNICEF Situation Analysis and special reports undertaken by consultants for AID.

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Organization of the following presentation is based on AID/W overall guidance on conceptual organization of the problem areas and specific guidance on the Madagascar CDSS update.

SUMMARY OF SOCIAL ANALYSIS

Madagascar has a complex social system with important regional variations. Inequaties tend to reflect historical settlement patterns and sociopolitical events. In the crop producing regions the poor have small rice plots and low levels of both in-kind and cash income. Particularly the poor are dependent on hillside land and the clearing of primary and secondary forests for cultivation. The problem of hunger is manifest in several ways and seems to be increasing.

Malnutrition is high among children. Also, the infant mortality rates are high. The GDRM, with UNICEF assistance, has been carrying out an Expanded Program of Immunization but coverage rates should be increased. Family planning services effectively reach only one percent of the target group.

There is a growing body of relevant data which will provide a basis for sound policy analysis and program/project design.

INCOME AND HUNGER

Land Distribution and Use

About 80 percent of all Malagasy families derive income from agricultural production, whether from rice, cultivation of other crops, livestock husbandry or a combination of these. There are significant differences in access to land, ecological conditions and the value of the crops grown which relate to level of income and hunger. More detailed information on this exists for the central highlands than for other geographic regions.

The central highlands is located in the provinces of Antananarivo and Fianarantsoa. These two provinces, which include other agroecological zones in addition to the highlands, have the highest population densities and account for 52 percent of the total population of Madagascar. In central highland localities where a rigid caste system existed, the amount of land, especially for rice production, currently controlled and owned by a household and their access to water for irrigation, reflect the caste of the family's lineage. Farmers gain access to more land through sharecropping and leasing arrangements. There is evidence that land poor families are increasingly forced to sell a portion of their holding when an emergency requiring cash arises.

Several case studies document differences in land distribution and use. While the pattern of holdings is not highly skewed when ecological factors are taken into account, the differences are significant in terms of a household's ability to meet its basic needs from agriculture. A 1984 study conducted by G. Rakotonirainy et. al. for FAO compares two sites. One site has a history of a strong caste system, is inhabited by Merina, and is located 50km. from the capital city within Antananarivo Province. The second community, within the traditional heartland of the Betsileo, is in Fianarantsoa Province. The size and distribution of riceland is more skewed in the Antananarivo than in the Fianarantsoa community. In the former 43 percent of the agriculturalists have less than 50 ares* of riceland, whereas 8 percent each have more than 200 ares. In the Fianarantsoa sample, 29 percent of the agriculturalists have less than 50 ares and 11 percent had more than 200 ares. In both communities the smaller the rice land owned the greater the percentage the non-rice, hillside land (called tanety and herein referred to as hillside land) is of the total land owned. For example in both communities for those with less than 15 ares of riceland, the hillside land accounted for 70 - 74 percent of their holding. Nevertheless, in terms of actual size of the hillside land controlled by each

*One hundred ares equal one hectare.

farming household, the size tends to increase as the size of the rice holding increases. For example, in the Fianarantsoa community those with more than 100 ares of riceland average 113 ares of hillside land, whereas those with less than 15 ares of riceland average only 43 ares of hillside land.

The Midwest region in comparison with the central highlands is more sparsely populated and has poorer soils and less rainfall. A study by FOFIFA of 433 households in 12 fokontany (group of villages) revealed that 16 percent had no land. Of those with land, 54 percent have less than 2.5 ha., 11 percent have 2.5-3 ha. and 35 percent have more than 3 ha. In general, the size of the hillside plots were larger than the rice fields. Most households had more than one parcel of each type of field. In the sample 18 percent of the households had no rice land while only 8 percent had no hillside land. Those households which controlled over 3 ha. of land often had some under sharecropping.

In the Midwest about three-quarters of the landowning households in the FOFIFA sample combine crop production with livestock production, cattle and/or pig raising. The Bara and the Sakalava who are known for raising livestock also practice crop production. In the area inhabited by the Bara, ecological conditions favor rice production and the area is usually self-sufficient in rice. The Sakalava tend to place less emphasis on crops than do the Bara, which is attributable to ecological conditions.

A study conducted by C. Kottak in 1966-67, in three communities in Fianarantsoa Province shows the diversity of settlement patterns and differences in access to key resources. His findings document that historical socioeconomic inequalities are mirrored in the current situation. His research also reveals significant practices and behaviors related to rice production. Kottak's findings show that farmers with more than one rice field tend to invest more labor in the traditionally more productive fields. Soil type influences the cultivation techniques and labor requirements. The labor inputs and yields vary with the type of rice cultivated, which is only partially a function of soil type. The traditional variety of rice, whose taste is preferred, is grown for domestic consumption, but balanced against other varieties in terms of labor, amount of land, soil type, and potential yields.

The main events in rice production are transplanting and harvesting and these are associated with a traditional division of labor based on age and sex. These major tasks, as well as

others, were often done with communal labor. However, communal labor parties whose traditional reward was food and drink are gradually becoming obsolete and are being replaced by paid labor.

Kottak's data show that the intensification of labor inputs on poor land can actually result in yields comparable to those obtained from better soils. In a study site with poor land conditions, the people worked between two and three times more on their rice fields, and in fact the yields were slightly higher than in the other two communities studied. The same community was poorer than the others and relied on family and communal labor.

When labor expended in drying and pounding rice for family household consumption is included in the calculations on the number of hours men and women devote to rice production, women tend to spend more hours than men on rice. If it is not included, men spend more time. On average an adult woman, solely or with assistance from children, spends about 300 hours a year pounding rice for family consumption.

A socioeconomic baseline study undertaken by the Highlands Rice Project in the Antsirabe area of Fianarantsoa Province in 1984 showed that 60 percent of the families farmed 25 percent of land surveyed and each had less than 20 ares of paddy land. In comparison, 10 percent of the farm families averaged 120 ares which accounted for 42 percent of the total land area. The survey also revealed that many farmers have large numbers of very small plots for rice. In the communities studied by Kottak, the average number of rice plots per community ranged from 7 to 12.

The fragmentation of riceland may appear extremely inefficient. In the central highlands it is the result of the inheritance system of the Betsileo and Merina, which is ambilineal, tending towards patriliny. A man inherits rights to cultivate on the ancestral estate of his mother's as well as his father's family. The man may choose to reside in his mother's village, or just to activate rights to cultivate there. Activation of the right to cultivate invokes a host of obligations, such as lending labor to assist others. A Betsileo woman cannot inherit paddy land but can inherit hillside agricultural land. In contrast, a Merina woman inherits rights to both types of land. The rights of inheritance of land, even if not invoked, are usually maintained through participation in ancestral tomb-centered ceremonies, which oblige the person to give gifts. Access particularly to rice land is an intricate part of the entire

social fabric and cultural history of Madagascar. Associated with this is access to water for irrigation which is just as important. However, no research seems to have been done on organizational forms, rights and responsibilities associated with water.

Both the smaller traditional and smaller government-assisted rice irrigation schemes appear to be better managed than larger government assisted ones. This is probably a result of community cooperation on the small, older schemes which has a historical precedence. Community cooperation is evident in the repair and maintenance of irrigation infrastructure, allocation of water, and communal labor.

The degree of cooperation among households in a community is normally related to the historical pattern of settlement and kinship affiliation. Communities recently settled, such as around government assisted large irrigation schemes, and comprising several kinship groups are less cohesive than others.

Because of the relatively high population densities and skewed distribution of land in the central highlands, there has been permanent migration over the decades within the highlands to areas of lower agricultural potential and movement into other regions. Permanent migration is motivated by the desire to obtain wage employment and to obtain land. Government schemes in other regions have provided some relief to the highlands. In the Midwest region a common pattern has been for migrants to engage in wage employment or sharecropping but eventually to obtain land. While no hard data are available, it is likely that those who migrate are the poor whose ancestors were slaves and commoners since these people would probably feel the strongest push towards leaving the area of their ancestral tombs. Kottak points to cases where over time a community has its regional appendage and tombs are built in the newer community. Permanent migrants usually do not give up land claims in their original home area, but allocate these land resources to close members of their family. Also, migrants normally maintain their claims to land through participation in ceremonies in the original home area.

Over the decades migration has also been from regions other than the highlands. For example, people from the southwest have settled in Sakalava territory. Anthropologist R. Huntington has concluded that Madagascar shows a pattern of continuous migration and while there are cultural variations and ethnic categories, there seems to be little correlation between the two.

The Lac Alaotra region located northeast of the central highlands has absorbed migrants since the early 1900s. The region originally inhabited by Sihanaka people attracted Merina and Betsileo in the early 1900s. During the colonial period large French concessions established in the area drew large numbers of migrant laborers, many of whom settled and eventually became landholders.

In 1962 the Societe Malagasy d'Amenagement du Lac Alaotra (SOMALAC) was created to redistribute modern irrigated land and further the development of irrigation. Some 7,500 families benefited from land distribution, receiving on average a 4 ha. plot. Sixty-six percent of the plots were 3-5 ha., 15 percent were less than 3 ha., and 19 percent were more than 5 ha. The size of the land allocated varied according to traditional land claims and productive potential of the land. Smaller plots, averaging 1.4 ha., were later allocated to farm families. Especially among families with larger holding, family labor is insufficient. This has led to some 15-30 percent of the total land area being farmed under a tenancy or sharecropping arrangement. Also the demand for seasonal labor, particularly for transplanting and harvesting relies on temporary migrants mainly from the central highlands.

The Lac Alaotra area is primarily a rice producing area, with approximately 68,000 ha. under rice cultivation. Almost half of the rice area (35,000 ha.) is under modern irrigated schemes, whose operation and maintenance is the responsibility of SOMALAC and the Ministry of Agricultural Production and Agrarian Reform (MPARA). The rest is under traditional irrigation. The region, however, annually looses up to 3,000 ha. of rice paddies due to poor maintenance of the primary irrigation system and to siltation and sand deposition resulting from erosion in the lake's watershed. The rice

marketed from the Lac Alaotra region represents about a third of the total marketed production in Madagascar. Rainfed agriculture also occurs on the hillsides and covers some 8,000 ha. Cassava, maize, beans and groundnuts are the main crops. Cattle are also important in the regional economy.

The main export crops are grown in the humid tropical areas which extend inward along the eastern coast, except for the extreme south and north. According to a 1984 World Bank report between 20-35 percent of all rural households are engaged in production of export crops. Most of these households produce export crop on a small scale, as shown below.

Total number of producers	Coffee	Vanilla	Cloves	Pepper	Cocoa
small traditional farmers	345,000	65,000	70,000	59,500	2,000
small commercial farmers	5,000	5,000	8,000	5,000	-
plantation type	10-50	1	2,000	-	n.a.
Average farm size (ha.)					
small traditional farmers	.5	.34	.9	.1	.4
small commercial farmers	4.5	1.0	3.1	.4	-
plantation type	50-2,000	12.0	9.5	400	500-2,000

The World Bank report states that the low price paid to producers has led smallscale farmers to neglect their cash crops and concentrate on production of food crops. Specific local studies carried out earlier, confirm the priority peasant farmers give to securing their domestic food needs. It is also apparent that difficulties in transport and receipt of payment add to the reluctance of farmers to invest significantly in the production of cash crops.

In recent years, migration has contributed to problems which reflect a growing pressure on the land. For example, in the Midwest and Southeast agricultural settlements on land previously used for pasture have placed greater pressure on available grazing land and occasionally fighting breaks out between the inhabitants and the newcomers. Migration combined with the natural rate of increase of population has led to clearing of forests for crop production, and poor management of the land which results in high rates of soil erosion and a decrease in biological diversity. Erosion in turn has caused serious impediments to irrigation within the watershed catchment area. It is estimated that erosion puts out of rice production as many hectares as is brought into production each year. (See the REDSO/ESA Energy and Natural Resource CDSS Update Report.)

The national Conference on Conservation of Natural Resources for Development was held in late 1985 and drew international support and involvement. The background documents, and reportedly many of the discussions, revealed a superficial perspective of the causes of and solutions to the current misuse and mismanagement of natural resources. The problem, however, is real. Clearing of natural and secondary forests for agricultural production is a result of land pressure felt in these areas and of the conditions of poverty in which the people find themselves. Erosion, which plays havoc with large investments in irrigation, is similarly a result of misuse of the land within the watershed, as people become more and more dependent on hillside farming and livestock to sustain themselves and their families. Further, redressive, corrective measures to protect the soil are limited by institutional factors, including the extremely limited number of GDRM staff to address the problem. The training and awareness campaigns proposed in a conference background paper are unlikely to stem the increasing deterioration of the natural resource base upon which the nation is dependent for its livelihood since this approach ignores the underlying causes and measures needed to address these causes.

The data on land use and distribution indicate that the poor tend to have small rice plots. For the poor, non-rice, hillside land is extremely important for earning an income to meet basic needs. Attention to rainfed crops other than rice which have a good nutritional value, market potential, and

ability to contribute to maintenance of soil fertility would particularly address the rural poor. Greater productivity on rice land through improved land and water use, and cultivation of a second crop during the dry season, would be of value in securing food and cash income for at least a portion of the households. However, attention also needs to be given to production of crops on the hillsides.

Recently the National Assembly enacted legislation which will affect rice cultivators. This legislation permits the formation of water user associations and will assist them to become financially autonomous by being empowered to collect user fees and to establish bank accounts. The intent is to establish and gradually strengthen the ability of users to finance at least minor repairs and maintenance of irrigation works. The overall financial ability to raise funds will vary based on the size of the scheme and on the number of users. However, these associations should develop a local financial maintenance capability to provide some assurance that external funds invested in repair or rehabilitation of these schemes will be sound. The ability to enforce the collection of user fees ought to be closely monitored. It is likely that on schemes with strong community cooperation, financial assistance from others may be forthcoming to assist households who through exception circumstances are unable to meet an obligation.

Land and Tree Tenure

Land tenure is significant since it relates to access to land, land distribution and land usage which includes protection of the soil, watershed management, and production of trees for woodfuel and building materials. Rights to land such as ownership, inheritance, use and disposal may be held by different parties at different times. These factors affect the level of income obtainable from agriculture.

Three basic forms of land tenure systems currently exist:

- individual, private property
- communal or corporate property
- state property composed of (i) public domain and (ii) collective property under cooperatives

Land law was introduced as early as 1891 and has undergone many phases. A major attempt was made at land reform in the 1970s which involved state expropriation of large estates and encouragement of widespread smallholdings, state farms, and collectives. Sharecropping and all forms of feudal obligations were forbidden, although there are few means of enforcing this. Agents have tended to discourage abusive sharecropping arrangements and encouraged fixed-rent contracts. In 1974 legislation introduced the idea of a social obligation to develop, maintain and use land. This was aimed particularly at those who claim land for speculation and for their descendants rather than putting it under production. If for a period of more than five years an owner of more than 5 ha. of land has not farmed the land personally or at his/her own cost, legally the property should be transferred to the state. (Land put under crops, trees and fallow are deemed by this regulation as farmed.) All sharecroppers or tenant farmers on such land are legally bestowed the right of preemption to the land. In spite of the far-reaching implications of this regulation, there appears to be no enforcement.

Different tenure arrangements, de facto and de jure, operate within local communities. Because of the historical importance of rice the claims to rice land are usually established de jure. For example, a farmer's parcel of irrigated rice land may be officially registered in his name, whereas the hillside land may be cultivated through traditional rights. Claims to hillside land for cultivation and to grazing land often follow traditional customary patterns.

In the Sakalava region, which extends along the western coast and inland, land nominally belongs to the local chief. Usufruct rights to cropland and grazing land however are maintained in perpetuity, unless difficulties arise with the local chief. Sakalava families sometimes move from one chiefdom to another because of conflict with the original chief or family feuds over inheritance. The Sakalava territory consists of numerous small chiefdoms and low population densities. Over the decade non-Sakalava have become integrated in the region. Also, in the past two decades government assisted irrigation schemes have attracted outsiders.

In areas of low population density in the coastal areas, sharecropping seems to be rare. However, some renting and loaning of land without a monetary charge occurs which actually signifies rights of acquisition. This takes place mainly through immigrants marrying into an indigenous family, the allocation of land to the young, and returning migrants asserting claims to land. While land is not sold per se, the person acquiring the rights of exploitation is usually obliged to perform work for the original claimant.

The Midwest has also been a region attracting immigrants over the years. During the colonial period immigrants sought wage labor and eventually claimed and cultivated land of their own. Currently about 16 percent of the rural households do not own land. Most of these are engaged in sharecropping. Because of the lack of unclaimed land suitable for rice and hillside cultivation, it is unlikely that the historical pattern of those engaged in sharecropping eventually holding land will continue.

Plots allocated on irrigation schemes fall under various tenure arrangements. Titles can be acquired in two of the largest parastatal rice schemes, FIFABE and SOMALAC at Lac Alaotra. In the Lac Alaotra area (the one most studied), after consolidation and redistribution of land, farmers were given lease-purchase agreements. The agreement provided that after 12 years of cultivation, mortgage and tax payment, the farmer would receive a title. The first titles were given out in 1983 to some farmers who had met their obligations within Lac Alaotra. Thirteen different types of sharecropping, land rental and hired labor contracts have been identified. (Data from the scheme show that the highest yields often come from rented land.) This occurs mainly because the holding sizes are larger than can be farmed by the farm family. Over the years, however, through inheritance, the individual farm sizes should diminish.

There is some evidence to show that in the densely populated ares of the central highlands, there is competition within families over the control of land. As land registration progresses, competition occurs between brothers. With a title, adults tend to hold the land in their name until they die, leaving sons with low status because they are not yet landowners. Parents who wish to sell a portion of their land are occasionally challenged in the courts by their heirs. The individual titled land seems to deprive women of their traditional rights to land in their family estate. The implications of increasing land pressure and individual ownership, are unclear for intrahousehold income distribution.

Less is known about tree tenure. In a central highlands area where a Swiss/GDRM agroforestry pilot project is being implemented, hill slopes are State land. The community insisted on registration of some of the land as individual holdings prior to planting trees. The insistence on land security prior to investing time and money in tree planting probably is true for other interventions aimed at watershed management and applicable nationwide.

Private and "communal" woodlots exist in the central highlands. The social regulations govern communal woodlots, however are not understood nor documented. It may be that the communal woodlots actually belong to a specific extended family. Lack of knowledge about community woodlots hinders an assessment of the feasibility of their promotion and of encouraging improvement and management of existing ones. Some woodlots are classified as sacred, communal forests. Apparently with clove trees and vanilla vines, the planter has exclusive rights.

In 1985 a new policy was formulated and announced with the aim of encouraging tree planting. The regulation states that:

> the tree belongs to the person who planted it and
>
> the planter who has correctly reafforested following written specifications will be given the right to own the reafforested land

The specifications are extremely strict and implementation will be difficult. If implemented, it is likely that this regulation will have both a positive and negative impact. While it ought to encourage the establishment of private woodlots, the wealthier people will be the ones who will be able to take advantage of this regulation. Reafforestation by wealthier people may indirectly benefit others through improved soil control and greater access to wood for sale, but may deprive future generations of poorer families access to hillside land for crop production.

Hunger

Due to multiple causes, hunger appears to be increasing. The GDRM has decontrolled the price and marketing of rice as a measure to increase production and improve distribution. Over the past few years the price of rice has fluctuated greatly. For example, in 1984 after harvest a kilo of white rice was 100-120 Fmg, while during the dry season the price rose to 500-600 Fmg. In November 1985 the price was 725 Fmg for a kilo of white rice in Antananarivo. Poorer families without a sufficient supply of domestically produced rice are hard pressed to purchase the amount deemed necessary to feed themselves. It is also likely that the high price has encouraged some families to sell some of their domestic supply to meet critical cash needs. The decontrol of rice marketing to promote a more effective and efficient system has left a gap yet to be filled by the private sector. This is particularly

true in regions which are traditionally dependent on movement of rice from surplus areas. These difficulties may continue until the private sector is willing and able to respond to marketing opportunities and an increased supply of rice decreases the price.

Yet, other symptoms point to the possibility of a deeper crisis. A decrease in the grinding capacity in surplus areas (excluding SOMALAC and FOFIBE) hinders movement of rice to deficit areas since transportation of processed rice is more efficient than of paddy. In the highlands as in other parts of the country, household production of groundnuts for domestic consumption and sale has decreased due to the poor quality of the seeds and disease problems. Even vegetable production is reported to have declined for lack of new seeds. The GDRM's extremely strict quarantine regulations prevent importation of new germ plasm. Recent smallscale nutritional studies show relatively high rates of malnutrition among children. The main urban centers have a larger number of beggars and street people. Formerly when rice was unobtainable by poorer families manioc and maize served as substitutes. So why should there be more hunger now? The increases in hunger may reflect regional patterns which drive the poor into the main urban centers.

It is likely that the lack of access to basic agricultural inputs especially improved seeds, and the deterioration of basic productive infrastructure, such as irrigation, combined with population pressure on the fragile ecosystem have locked numerous smallscale farmers into a cycle of poverty from which they are unable to respond despite recent policy changes. Because of the small amount and quality of the land owned, a small percentage of households are unlikely to meet most of their needs from farming unless there is a major technological breakthrough. A much larger percentage of smallscale farm households, however, have the requisite land resources but need greater accessibility to low-cost inputs and many need financial assistance, in the form of more opportunities for off-farm employment or loans, to break out of their poverty trap.

Before increases in the price of rice, when prices were controlled by the GDRM, food consumption patterns reflected economic status. The wealthier households consumed more meat, vegetables and other nutritious foods, while the diets of poorer households consisted largely of rice.

While food taboos are practiced, they do not appear to be among the main causes of hunger. Food taboos may apply to a large ancestral group, a family, or a few individuals. The taboos involve prohibitions against eating certain types of

animals or fish, eating certain types of relishes or fruits, or drinking certain beverages. For example, among the Sakalava there is a prohibition against rearing and or eating zebu cattle with certain types of coloration patterns. Approximately 25 percent of the population observe a prohibition against eating pork, but this does not diminish the importance of pig rearing and marketing in the Midwest and central highland regions.

Over the past two years the GDRM has monitored food consumption and sales of farmers (see section on On-going and Proposed Research). However, currently the information is not accessible to donor agencies nor will it be made public. This is the direct consequence of the GDRM experience when a donor used the information against the GDRM to press for specific policy reforms and when a consultant used information to advocate a specific course of policy action rather than to set out policy alternatives. The information is indeed politically sensitive.

Incomes

No studies are available which analyze levels of income needed to sustain a minimal standard of living by urban and rural households. Neither is there recent nationwide data on patterns of income distribution. A few case studies do point to the dynamics of income distribution and composition.

In the communities covered in the FAO study discussed above (under Land Distribution and Use) almost all households in the Antananarivo Province community had a non-agricultural source of income, which is related to the peri-urban status of the community. In comparison, the Fianarantsoa community's main source of off-farm income was from the occasional sale of labor and normally accounted for less than 10,000 Fmg annually. The researchers found that almost all households with an agricultural revenue above 200,000 Fmg concentrated on farming, indicating structural problems which push others into informal sector activities and wage labor to supplement agricultural production to meet domestic needs.

The same study shows a direct relationship within each community between total income and amount of rice land owned. In each community families with smaller rice plots had lower total incomes, even when accounting for income from non-farming sources. The range of sources and levels of off-farm income however, were much higher in the periurban community than in the Fianarantsoa community. In the latter only 37 percent derived some income from off-farm activities, compared with 88

percent in the periurban area. Reflecting the lack of options in the Fianarantsoa community, 76 percent of those with off-farm sources of income worked as occasional laborers, in comparison with only 39 percent in the Antananarivo community. Total annual incomes were estimated as follows:

Total Household Income (Percentage)

	Below 200,000	200-300,000	300-400,000	400,000 +	Nu.
Antananarivo community	39	13	42	6	206
Fianarantsoa community	57	21	6	16	273
Both	50	17	20	13	479

The income estimates above include agricultural and non-agricultural income and do not take into account expenditure on agricultural production. The FAO study estimates annual minimum expenditure for food and major items for a family of six. The budget is far from inclusive and does not set out alternative expenditures on food, but rather bases it on a rice consumption diet. However, it does indicate a poverty class for families earning below 200,000 Fmg.

The legal basic minimum wage rates for low wage earners have kept pace with the increase in prices for basic consumer goods. It is unclear, however, if the wage rates are set as a family wage rate or to cover basic needs of the individual workers.

POPULATION AND FACTORS AFFECTING THE ACCEPTANCE OF FAMILY PLANNING

Madagascar has approximately 10 million people (1985). In 1975 when the last population census was taken, 16 percent of the total population (7.6 million) were living in the 47 urban areas. One-third of the urban population, however, resided in the capital city of Antananarivo. According to 1980 data, the average number of people per household is 5.16, with a medium of 4.02. The 1975 population census showed that households tend to be smaller in urban areas than in rural areas and that 23 percent of the urban compared with 14 percent of the rural households are headed by women.

The highest rural population densities occur in sections of Antananarivo and Fiananantsoa provinces, where there are between 50 - 100 people per km^2. Other concentrations of population (20 - 50 people per km^2) are found in the eastern coastal areas. Inter-provincial migration, either permanent or temporary, account for the distribution of approximately 10 percent of the 1975 population. An analysis of the net migration by province reveals a negative flow in Fianarantsoa and Tulear provinces. Those migrating from Fianarantsoa go mainly to Antananarivo and Majunga Provinces, while those from Tulear mainly migrate to Majunga and Diego Suarez provinces. Not surprisingly, the provinces of Antananarivo and Majunga have net increases in migrants. Migration is mainly to rural areas for employment and there does not appear to be a large differential between the rate of migration of males and females, indicating that entire families move.

The legal age of marriage is 17 for males and 14 for females. Information from the 1975 population census shows that 10 percent of the rural males and 39 percent of the rural females were married before age 20. The average age was 19.6 for females and 22.9 for males. Polygamy has been legally prohibited since the 1960s, but is still practiced in some coastal areas, especially Tulear Province. The general tendency is for a newly married couple to establish residency at the home of the husband's parents. Marriage patterns vary according to socioeconomic status. Among the proscriptions governing marriage, none appears as strong as the proscription against intermarriage of descendants of free people and slaves. Marriage involves bridewealth transfers. Among the Betsileo, custom recognizes a trial marriage period to allow the groom and his family to evaluate not only the potential wife's appropriateness as wife and daughter-in-law but also her procreative powers. Marriages are often finalized after the birth of a child. The customary wish of happiness to a newly married couple, among some groups, is the wish that they have seven boys and seven girls.

The actual fertility rate is less. The 1975 census showed a fertility rate of 6.4, whereas data from the 1980 household budget survey by INSRE gave a fertility rate of 5.8. Malagasy generally assert that they like to have as many descendants as possible to comfort them in old age, to attend their funerals, and to conduct ancestral rites. At least outside the densely populated central highlands, it appears children still have an important economic role in performing agricultural and other domestic tasks. In the central highlands, though, land pressure results in the desire of agnates to control exclusive assess to family estate and limit claims from other relatives such as sister's sons. An adjustment mechanism exists through

the custom of fosterage, usually with relatives, although it is possible that with the increasing conditions of poverty this system is under stress. Fosterage is often at the suggestion of an astrologer or diviner. Belief in the supernatural realm is strong among all Malgasy groups and includes a belief in a person's destiny. Every condition and event is deemed to have a cause, often personalistic.

The customary supernatural realm exists side by side and is often incorporated with adhence to Christianity and "modern" science. Almost half of the population report themselves to be Christian. The Christians are almost evenly divided between Roman Catholics and Protestants. About fifty percent of the population follow a traditional religion. The upper strata of society and leadership of the country consists primarily of Christians.

The Catholic church is active in the provision of social services and it can be assumed that they will only advance natural family planning methods. However, because of the Malagasy sense of privacy this method is unlikely to gain many followers.

Currently family planning services serve less than one percent of the target population. Fianakaviana Sambatra (FISA), the main private voluntary organization providing family planning services, has stringent eligibility criteria for women wishing to receive contraceptives. A woman must present proof that she is married or living in a consensual union, must obtain her husband's signature on a consent form, and provide two photos for her FISA membership card. Also, contraceptives are furnished to a woman only when she is menstruating. While these criteria are not enforced to the same extent in all FISA clinics, they certainly limit access and discourage women from seeking services. It is generally considered that FISA has such criteria to prevent criticisms being levied by the GDRM and more vocal members of the public.

Among the middle and upper urban class married couples, it is not unusual for a woman to have limited her family to less than 4 children. Women have obtained IUDs and other contraceptives while outside Madagascar. There is also evidence of the use of abortion in urban and rural areas to limit the number of children. Thus, it appears that a significant although maybe small percentage of the target population would readily welcome greater access to family planning services. A better understanding of the receptivity to family planning will be available when the results of 1985 survey are analyzed. Attitudes, knowledge and practices in regard to population and family planning were covered in a 1985

nationwide survey of over 8,000 males and females aged 15 years and older. The survey will provide information on views of males and females of varying socioeconomic status (see section on On-going and Proposed Research).

HEALTH DEFICIENCIES

Morbidity and Mortality*

The life expectancy of a Malagasy woman is 45.9 years and that of a man 44.8 years. Poor health of pregnant women and the need for them to continue to carry out arduous tasks contribute to miscarriages, low birth weights and maternal deaths. The maternal death rate was estimated to be around 1.3 percent in 1980, with regional variations from .09 percent to 2.4 percent. Ministry of Health Statistics for the first semester of September 1984 showed maternal mortality at 4.6 percent. The number of miscarriages/abortions has been estimated to be at 50 per 1,000 pregnancies. A small survey undertaken reveals that 14 percent of the new borns are underweight (less than 2500 grams).

Causes of morbidity in adults tend to vary by geographic region, reflecting climatic factors. Respiratory diseases are predominate in the highland province of Antananarivo, while infectious, parasitic and digestive diseases prevail in the coastal areas. Some 25 percent of all recorded infectious diseases are due to malaria. Health service facility records indicate an overall death rate of 18 per 1,000 inhabitants. Most of the deaths (78%) recorded in health facilities were of children aged between 0 and one year. Eighty percent of the recorded deaths of children under the age of 5 were caused by transmittable diseases.

The mortality records from health facilities indicate that mothers are prone to take sick children to modern health facilities for care, while adults are less likely to turn to these facilities when seriously ill. The latter is probably due to a belief in witchcraft and sorcery which prevails among the Malagasy. Illness and death are often considered to have personal causes. Nevertheless, most Malagasy like Africans blend the belief in the supernatural causes of illness with faith in modern medicine.

In the past few years there has been a problem in regards to availability of chloroquine. None has been available in many health facilities. What has been available has been reserved for children. The problem of availability is caused by a scarcity of foreign currency.

* This is primarily based on information from UNICEF 1984.

The rate of infant mortality is uncertain. Calculations in 1975 on the basis of information from a post-census survey showed the rate to be 72 per thousand. The rate was reexamined in 1981 following the introduction of a new health statistics system and showed a national rate of 92 per thousand, the highest being in the western province of Mahajanga (148 per thousand). A study carried out in 1978 covering some 3,000 mothers attending maternal and infant health centers gave a rate of 144 per thousand. It is generally considered that the rate in more on the high side, at over 100 per thousand. It is hoped that the effort to improve statistics on births, deaths and other vital population statistics, undertaken on a sample of 10 percent of the fokontany and 1.2 million inhabitants through the Service of Health and Demographic Statistics in the Ministry of Health, with assistance from UNFPA, will result in better basic statistics.

Immunization

Since 1976 Madagascar has had an Expanded Program of Immunization (EPI) for tuberculosis, diptheria, whooping cough and tetanus. Initially the poliomyelites vaccination was given only in those areas where the disease was thought to be abnormally frequent, but currently it is provided nationwide to the target population. Vaccination against measles has not been included in the program because of the high cost of the vaccine and its relative thermal instability. However, measles vaccination began to be included in the EPI program in late 1985.

The official target for diptheria, tuberculosis and whooping cough and polio vaccination is the 0 - 4 year old group, with priority given to the 0 - 1 year old, for whom the death rate is higher. Information from 1984, however, shows that the vaccines have been allocated to the 0 - 2 year old group. In 1984, 404,134 children ages 0 - 24 months received BCG vaccination or approximately 38 percent of all those within this age range. Children born in health facilities now receive BCG at birth. Madagascar manufactures approximately 2 million doses of BCG vaccine a year. The rate is expected to increase with modernization of the factory. In 1984 approximately 43 percent of the 0 - 24 month old received the first diptheria injection, but only 27 percent received the third injection. The same year an estimated 28 percent of the 0 - 24 month old received their first polio booster and 16 percent the third injection. No data for 1984 were available in regard to regional distribution.

In 1980, four years after the introduction of the EPI, the national coverage for diptheria, tuberculosis and whooping cough for the 0 - 4 year old group was estimated at 32 percent. Variation by region was, however, great: 45 percent in Antananarivo Province and only 17 percent and 16 percent in Toliary and Mahajanga provinces respectively. The coverage rate for BCG was about 34.5 percent with less regional variation: 45 percent for Antananarivo to 29 percent for Mahajanga. The 1980 record showed, however, a drop-out rate of more than 50 percent between the first and third DTP injections.

A combination of obstacles need to be overcome in improving and expanding the EPI coverage. The greatest is the logistics problem and setting up of cold storage chains. Second, further attention needs to be given to staff motivation and training in communication and education. Third, more public awareness and education is required because of the lack of comprehension and understanding of parents, prevalent in certain regions, which hinders immunization of their children.

Local Medicinal Plants

There is the potential of valuable medicinal plants being located in Madagascar, which has 72 plant varieties located nowhere else in the world. It is estimated that as many as 85% of the Malgasy plants are endemic to Madagascar. This endemism extends into the level of both the genius and family. The potential utility of the Madagascar flora is not limited to the field of medicine. Madagascar has as many as 50 wild species of coffee and 5-6 species of wild vanilla.

Several older, mainly locally-focused studies, report the use of indigenous medicines. The medicinal properties of these have not been analyzed. There is considerable concern that the existence of potentially valuable plants is increasingly threatened through the clearing and burning of natural vegetation for agricultural production.

Nutrition

No new data exist on a nationwide basis to document the extent and distribution of low levels of nutrition. However, a nutritional survey was carried out among 651 households in parts of Antananarivo and Fianarontsoa provinces. The survey was conducted jointly by the staff of the Ministry of Health and of the Highlands Rice Project, financed by the World Bank, and with technical and financial assistance from UNICEF. The survey sampled 998 children between the ages of 0 and 60 months, using anthropometric measurement of height, weight and

age. The results show a high incidence of malnutrition. Thirty-four percent of the children surveyed had a weight for age equal to or less than 80 percent of the WHO standards. Sixty-one percent revealed a height for age equal to or less than 90 percent of the WHO standard. The incidence of acute malnutrition indicated by low weight for height, using an 80 percent mark according to WHO standards, was revealed to be less than one percent of the surveyed children.

In comparison, a survey undertaken in child health care centers in rural areas of Antananarivo District in 1979 showed 2.3 percent of the children aged 0 - 72 months with acute malnutrition and 32 percent with age for weight less than 80 percent WHO standards. This latter survey indicated a relationship between malnutrition and the number of children in the family. In families with more than 6 children, 35 percent of those sampled were malnourished, compared with 27 percent of the children from families of five or less children. It was also found that the rate of diarrhoea was two times higher among malnourished than well nourished children.

The UNICEF assisted study referred to above was carried out on the same sample as those covered in the socioeconomic baseline survey for the Highlands Rice Project. Therefore, it would be possible to further analyze the data to study the relationship between food availability and child nutritional levels. To date, however, this has not been carried out due to other demands on Project staff and lack of funds for a consultant.

Data from the 59 Catholic Relief Services' maternal and child health centers also serve to document the low nutritional status of Malagasy children. Children aged 0 - 60 months who are enrolled in the CRS clinics show little improvement in nutritional status over a period of time in spite of the receipt of the CRS food package and parental agreements on use of the food. For the period December 1984 - May 1985, 52 percent of the children were below the 80 percentile age for weight ratio. The lowest rate was in Tulear area (39 percent) and the highest in Antsirabe (69 percent). Data collected in June 1985, the harvest period, showed a slight improvement: 47 percent of the children were under the 80 percentile age for weight. No significant differences appear between age categories.

UNICEF intends to support and aid further smallscale surveys in the coming years. Where possible the intent is to attach the surveys to an on-going rural development program so that the infrastructure will be in place for any follow-up action. It is unlikely however, that the opportunity to piggy-back the survey on top of another will present itself.

A combination of factors appear to cause malnutrition among children: lack of food, low levels of immuniation, unclean drinking water, and lack of access to nutritional foods. Also, there are significant nutrient losses when rice is processed manually. A CRS report notes that their nutrition education component at the MCH centers is hindered by the lack of nutritional foods in local markets for demonstration.

ON-GOING AND PROPOSED RESEARCH

The National Institute of Statistics and Economic Research carried out a Household Income and Expenditure Survey in 1978. At the time of the CDSS FY 1986 it was hoped that the survey could be tabulated, analyzed and published with assistance from AID to provide a better understanding of poverty groups. A USAID-financed assessment by the US Bureau of Census and the US Department of Agriculture in 1985, however, pointed to methodological problems of the survey. First, the rural survey, including semi-urban areas, was disrupted because of financial problems so that fieldwork was reduced to 7 days per household and the data collected over a period of only 8 months, with two visits per household. The survey of the large urban centers was carried out as planned: each household being visited on a daily basis for 10 consecutive days and three times per household at 4-month intervals. The field work was done in two tranches, three years apart. Thus, adjustments for inflation in prices and earning index and for general economic conditions would be required to make the two comparable. Second, the fourth seasonal cycle was not covered in the rural survey, and because of seasonal variations in income from agriculture it would be difficult to project. Finally, no information was collected on size of the farm holding, a major indicator of wealth.

In spite of these difficulties, the consultants concluded that it might be useful for the Institute to concentrate on the urban household data, with help from outside assistants. The Institute has requested assistance from AID under MARS I, to edit, tabulate, analyze and publish the data. The Institute considers that the training and learning experience are as important as the end-product. This is reasonable and justifiable.

As of July 1985 the Institute was transformed into the General Directorate of the State Data Bank and attached to the Presidency. Its responsibilities have yet to be finalized. Nevertheless, it is expected to continue to be responsible for conducting an annual survey of industry, a monthly price survey and for monitoring the civil registration and vehicle registration systems. Also, it will continue to be responsible

for the population census and probably other special, national surveys. The Institute undertook its first population census in 1975. Although the date of the next population census has not been finalized, it appears that it may occur in 1987 to provide information for the 1988-1992 national plan. Because of the relatively short period for adequate planning, outside technical assistance will be required to help plan for the census. The content of the census will be decided by an interministerial committee. Based on the last census, it will probably provide a data base for analyzing migration patterns, age structure of the population, fertility and mortality rates, size and structure of households, and educational levels.

Additional nationwide data will be available from the large-scale sample census of agriculture which was began in July 1984 by the Ministry of Agricultural Production and Agrarian Reform with assistance from FAO and supplemental support from AID through use of local currency. Problems in timing and logistics, exacerbated by financial constraints, made it necessary for the field work to be divided : the northern half of the country was covered during the first 6 months and the southern half during the second six-month period, with some arrangements for quick trips to the north to collect production data. Information is also being gathered on post-harvest losses, and production costs and yields of the main crops. A special survey is being carried out on large scale farms.

The sample agricultural census will provide cursory data on land tenure arrangements such as if the farm family owns, sharecrops, grants or leases land. Although sharecropping is illegal, there does not appear to be a conscious effort among those engaged in the system, particularly the sharecroppers, to withhold information. But, in cases where ancestors of slaves and of clients maintain in perpetuity the right to use but not dispose of land registered under the descendants of the original patron, it is unclear under what tenure form the land will be reported. Also, the census data will not provide information on the intrahousehold dynamics of rights to land. Nevertheless, an analysis of this data will permit an assessment of the geographic distribution and magnitude of the different tenure patterns on farms. These patterns can be assessed in regard to other variables to determine if there is a positive correlation with investment in agricultural production and with agricultural output.

In addition, the sample agricultural census will permit an identification and analysis of the poor in regard to land tenure arrangements, land size, agricultural output, ownership of agricultural implements, size and structure of the labor

force, and sex of household head. However, it will not permit an analysis of the structure of household income since off-farm sources were not covered. The census will also facilitate a study of the structure and composition of farming households. The statistical unit in MPARA intends to analyze the data according to socioeconomic variables, although this is of lower priority for MPARA than other types of analysis.

There is no organization or branch of government which has a permanent structure to gather social and economic data from rural and urban households. However, the MPARA, with assistance from FAO, intends to establish a permanent system in the statistical unit for collection of agricultural data based on a national sample. This would provide yearly statistics on crop areas and production and would facilitate crop forecasting. The unit would also conduct special surveys and has already identified soil erosion as a topic for a special survey.

For the last two years the statistical unit in MPARA in collaboration with the Rice Coordination Unit, has been collecting data on a regular bases from a sample of households in urban centers and in nine of the 16 agroecological zones to determine food consumption patterns, especially of rice. This is done through acquisition of information on household expenditures including the consumption of food produced domestically. This survey is expected to continue.

Also, MPARA is responsible for technical and socioeconomic studies in regard to rice schemes slated for rehabilitation. For some of the larger schemes, consultancy firms are hired to carry out the studies. For the small schemes, a system is being developed and financed under a World Bank project. A questionnaire has been designed to obtain technical, social and economic data from individual riceland farmers.

The National Center for Applied Research on Rural Development has four departments concerned with technical research. A fifth, the Department of Development Research, provides supporting services to the other departments and helps with the economic interpretation of research results. This department also carries out regional socioeconomic studies, but activity is greatly restricted by a lack of personnel (see Tom Zalla, Data Analysis Capabilities within the Agricultural Sector of Madagascar, UDSA/AID, March 13, 1985). Currently the Department's work centers on four regions. In the Lac Alaotra region the focus is on seasonal labor migration and on constraints to the adoption of technological innovations. To date the research in the Midwest has consisted of a large diagnostic survey centered on crop and

livestock production. Work in the coastal southeast has been on coffee production. Research in the Highlands centers on constraints to the introduction of specific new crops and on areas from which seasonal labor migrates to Lac Alaotra. The Department, using survey methods, tends to focus on constraints to the adoption of improved technologies and on ways to overcome these. The research does not give adequate attention to risk aversion strategies and intrahousehold dynamics, both important factors related to agricultural production.

An economic study is currently being conducted through FOFIFA by a U.S. Ph.D. student which addresses the interaction of policy and production options of highland farmers using a linear programming analysis.

Discussions and informal training sessions have been held with FOFIFA staff by short term farming systems experts. This was done under MARS I and in preparation for a national conference on agricultural research priorities.

In 1985 a survey was conducted by the the Ministry of Population, with assistance from UNFPA. Information will be available on views of males and females of varying socioeconomic status concerning:

whether the population in their locality has increased or decreased during the past decade, and the problems this has created,

reasons for preferring either large or small family sizes,

the causes of female and male sterility,

abortion,

provision of sex education to young males and females, and on population education,

the causes of premature and delayed child births,

the number of meals eaten during the harvest season and summer,

the age at which children should be given mixed foods,

the causes of the most frequent childhood and adult illnesses,

the utility of bush fires and

exhumation.

In recent, on-going and proposed research three important socioeconomic and institutional topics appear to have been neglected. First, little seems to have been done on the interface at local levels between farming households and public and private services (such as produce and agricultural input markets, and agroprocessing facilities) especially since the enactment of new economic policies on pricing and marketing. Though much has been written on the structure and functions of government institutions, there is limited information on the access of male and females to such services. While the fokonotana has been instituted as a major local level community organization for decision-making, the degree of democratic decision-making, the ability to enforce decisions, and other aspects of how they work has not been researched.

Second, no studies appear to have been undertaken within the framework of intrahousehold dynamics to assess the loci of decision making, control over resources, gender distinctions and so forth. The research does not include male and female farmers' perceptions of major problems, their adjustment strategies, and views on possible solutions to these problems.

Third, studies of community dynamics and cooperation have been neglected. Although people speak of numerous small community level organizations, their objectives, degree of commitment, access to resources, and so on have not been the subject of research. In particular local studies should be related to rice irrigation schemes, woodlots and establishment and maintenance of mini-hydropower facilities.

STRATEGY

Overview

Currently microlevel social and economic data are not available for a comparative regional analysis of conditions of poverty which could be used to determine a regional focus for the AID program. Moreover, the specific objectives suggested for AID's program can best be achieved by maintaining a national level focus. This does not preclude a regional focus within bilateral projects when appropriate. The program objectives suggested herein are based on the recognition of the need to keep AID's management burdens at a minimal in Antananarivo, REDSO/ESA, and Washington. It assumes that there will be two direct hire officers and three full time non-direct hire staff to oversee the program. It is proposed that assistance be provided by AID to selected aspects of on-going programs and to new projects in collaboration with other donor agencies.

AID ought to continue to focus on the rehabilitation of the agricultural sector. Attention to food crops is justified since Malagasy farmers tend to devote resources to secure adequate production of food crops for domestic consumption prior to allocation of resources to the production of cash crops. The suggested program objectives include limited support to health and family planning activities. The proposed specific objectives outlined below address the period up to FY 1990 and focus on the following sectoral goals:

- increased production of food crops on a sustainable basis,
- more equitable distribution of income and food consumption,
- increased acceptance of family planning and
- improved health status of children and women.

The above can be assisted by focusing the AID program on the following specific objectives.

a) Strengthening Malagasy capacity and capability to plan and manage as well as to collect, process and analyze data for policy alternatives and for the design and evaluation of development programs/projects aimed at the alleviation of poverty.

b) Improved capacity of FOFIFA to conduct farming systems and on-farm agroforestry research to identify improved technologies and extension methods to effectively reach male and female farmers operating under different resource patterns, and to identify improved varieties of rice appropriate to different ecological conditions.

c) Greater accessibility to improved seeds through selected support for seed multiplication of rice, peanuts and potatoes.

d) Improved physical and managerial resources on selected private sector rice irrigation schemes farmed by smallholders

e) Increased sustainability of agricultural production through assistance to selected forestry and natural resource activities.

f) Improved accessibility in the rural areas to energy-efficient agro-processing facilities, agricultural inputs, basic medicines, and agricultural markets. Increased off-farm employment opportunities at adequate wage rates through labor intensive productive enterprises.

g) Increased accessibility to child health services through greater EPI coverage and through maternal and child health services which include family planning services.

h) Increased acceptance of family planning by the GDRM and greater access to family planning services.

The program takes into account the use of PL 480 funds, bilateral project funds, access to centrally-funded projects, and the possibility of AEPRP funds as exemplified in Table 1.

Table 1

Summary Table of Objectives and Sources of Funds

	Bilateral Projects	Local Currency	Central Projects	AEPRP
a) Data collection & analysis	X	X		
b) Farming systems, agroforestry & rice research	X	X		
c) Seed multiplication		X		
d) Irrigated rice schemes		X		
e) Forestry & natural resources	X	X	X	
f) Services, commodities & employment				X
g) EPI & MCH linked with FP		X		
h) Acceptance FP			X	

AID should encourage greater involvement of non-government, non-profit organizations in development activities through dialogue with the GDRM and in the availability of local currency funds to support selected, viable activities. At this time, only a few of the many indigenous NGOs are focused on development in comparison to welfare activities and have the capacity and capability to undertake development work. Ground should be laid, however, for greater AID assistance to the local NGOs within the coming years. Dialogue is necessary with the GDRM since its permission must be obtained for the NGOs to receive financial assistance from outside donors.

Discussion of the Specific Objectives

1. Strengthened GDRM capacity and capability to plan and manage as well as to collect, process and analyze data for policy analyses and for the design and evaluation of development programs/projects aimed at alleviation of poverty.

This is an enormous and long term task. AID should continue to support efforts in the Ministry of Agricultural Production and Agrarian Reform, the General Directorate of Plan, the General Directorate of the State Data Bank, and FOFIFA. It should also support the Ministry of Animal Production and Water and Forest Resources in selected areas including training in collaboration with World Bank projects.

Within this context, AID should play a major role in helping to increase the collection and analyses of data disaggregated by sex and in encouraging the use of this information in the design of programs/projects. Assistance should be provided through short-term technical assistance for seminars and on the job training, and by supporting participation at international conferences centered on women in development and gender relations. Furthermore, AID should help ensure that women are well represented in in-country and out-of-country training financed by AID.

MARS I includes in-country training and seminars as well as short-term technical assistance to assist with data processing and analyses. The processes begun under MARS I should continue to receive AID support together with follow-on activities (including training). For example, under MARS I funds are available for training in social analysis. Because no opportunities have been identified for short-term training in the U.S., it is expected that a special course will be provided in Madagascar. The scope of this training is expected to be finalized by April 1986. Also, if necessary, MARS I funds are expected to be available for a synthesis report on land tenure systems and patterns and possibly for a seminar based on the report. The outcomes of both of these activities may call for additional assistance which should be included in any forthcoming bilateral project assistance and in use of local currency funds.

If requested, AID should continue to support the GDRM to monitor the effects of changes in economic policy upon rural and urban inhabitants, especially the poor and women. In the past AID has actively helped do so through assistance to the statistical unit in MPARA. This assistance was in the form of local currency to help in the collection of data on urban and rural food consumption patterns and in the analysis of the data.

AID should discuss with the statistical unit in MPARA and with FAO the feasibility of providing short-term technical assistance and computer equipment for the analysis of the sample agricultural census data according to social and economic variables. This ought to receive priority attention so as to provide a better data base on agricultural households in Madagascar. The type of analysis suggested is discussed above under Current and Proposed Research. Also, the statistical unit should be assisted as needed to carry out special surveys, particularly on soil erosion, and for training in data editing, tabulation and analysis. This assistance would supplement that from FAO and could be achieved through short term technical assistance, short-term training in the U.S. and the availability of local currency funds.

If funds are not forthcoming from either UNICEF or the Highlands Rice Project to process and analyze the nutritional survey data together with household baseline data, AID should attempt to identify funds for this task. (These data are discussed in the above section on Nutrition.) It is suggested that the best alternatives for carrying out the work would be that:

the statistical unit within the rice project do the work under the guidance of the original consultant, or

all parties concerned agree to send copies of the data to the original consultant to process, analyze and write the report.

While the strategy for achieving this objective centers on increasing the ability of the Malagasy, in specific cases, priority attention may need to be given to the end-product. This would be justified to prevent an "overload" on those charged with carrying out specific responsibilities such as data processing and analysis and when the timely presentation of the information would assist in program/project design or evaluation.

Assistance for the above activities would mainly be through bilateral project assistance. Local currency funds, though, should be available to finance selected activities and technical assistance might be provided under centrally funded projects.

2. Improved capacity of FOFIFA to conduct farming systems and agroforestry research and to identify appropriate, improved technologies and extension methods to reach male and female farmers operating under different resource patterns. Identification of improved varieties of rice appropriate to different ecological conditions.

The research begun on rice under MARS I should be continued and expanded. Also, under MARS I, AID has helped to finance short-term consultants to help increase the awareness of FOFIFA staff of the objectives of farming systems research and methodologies employed. It is anticipated that the same process will be followed with regard to agroforestry research, using a short-term consultant from ICRAF. No plans have been made, however, for a short-term consultant to help increase the awareness of the role which anthropologists/rural sociologists can play in a farming systems program, including attention to gender differences related to production. It is recommended that AID fund such a consultancy. Consideration should be given to obtaining an expert who has been on a successful multidisciplinary farming systems team, is well-versed in various approaches and examples of successful techniques, and is fluent in French. This assistance is considered extremely important given the analytical frameworks currently employed by FOFIFA social scientists.

AID should help fund both farming systems and agroforestry research through FOFIFA. It is expected that the farming systems research will center on rice production. However, it is important that key intrahousehold and suprahousehold variables are examined that relate to and effect rice production, such as the allocation of labor to different production activities, the strategies used by farmers in regards to variety of rice grown, and ability to purchase commercial agricultural inputs. The social scientists should also play a major role in the selection of trial farming households to help ensure that not only the wealthier farming households are involved.

The initial focus of the AID-funded farming systems research may be on rice production systems. But, because of soil erosion problems and the limited access to riceland and greater access to hillside land among poorer households especially in the highlands, the research should gradually be expanded to address the production systems and conditions of poorer agricultural households.

Assistance in farming systems research should be provided to the Department of Development Research, FOFIFA, through short term consultants, in fields such as agricultural economics, anthropology, and computer applications, and through the provision of local currency funds for field research and of foreign currency for computer equipment.

In regards to on-farm agroforestry research by FOFIFA, it is recommended that areas are selected where erosion rates are high and/or where there is a severe scarcity of wood. The research should be coordinated with a follow-on development project, implemented by a non-government, non-profit organization. The on-farm agroforestry research and project implementation ought to take into consideration socioeconomic factors, including land tenure and women's rights to trees planted for fuelwood.

Where appropriate the activities suggested above should be eligible for local currency funds and AID should draw upon centrally funded projects. Most of this endeavor should be included in bilateral projects.

3. Selected support for seed multiplication of rice, peanuts and potatoes.

AID should continue to assist to make more available improved seeds through selectively supporting seed multiplication of rice, peanuts and potatoes. Peanuts are important because of their nutritional value. Potatoes are included because of their rapidly increasing popularity among the Malagasy and their potential as an acceptable basic food to replace manioc as a substitute for rice among poorer households.

This support should come through the availability of local currency funds to support viable proposals. The requisite technical expertise must be available. While initially the seed multiplication activities are expected to be undertaken by the public sector, AID should investigate the feasibility of encouraging seed multiplication as a small to medium scale commercial private sector enterprise to facilitate greater accessibility to improved seeds in rural areas.

4. Physical and managerial improvements on selected private sector rice irrigation schemes farmed by smallholders.

AID should continue to support requests for local currency funds for improvements on selected small rice irrigation schemes but only those in which the land is owned and cultivated by smallholders. In addition, AID should consider requests for local currency assistance related to the establishment of water user committees. For example, the process of establishment of such committees may require more training of regional supervisors and assistance in monitoring the committees to provide feedback on further required

assistance. Also, local currency funds should be available to support the socioeconomic and technical survey of smallscale private sector rice schemes, under the direction of a World Bank technical assistant. However, approval of local currency support should be contingent on a few modifications of the questionnaire that will provide better information on social variables including gender issues.

5. Increased sustainability of agricultural production through assistance to selected forestry and natural resource activities.

See the REDSO/ESA CDSS update on energy and natural resources for suggested activities, strategies and sources of funding.

AID should also consider local currency support for the collection of indigenous plants when tied to the collection and analysis of data on adjacent human populations which has a development focus. This is considered essential because protection of indigenous plant species will only be secured when the socioeconomic causes for destruction of indigenous plant materials are adequately understood and addressed.

6. Improved accessibility in the rural areas to energy-efficient agro-processing facilities, agricultural inputs, basic medicines, and agricultural markets. Increase off-farm employment opportunities provided at adequate wage rates through labor intensive productive enterprises.

This specific objective should be achieved through support to private sector enterprises in rural areas. It might take the form of (a) loan funds available through local banks, (b) commodity imports for local purchase, or (c) short-term technical assistance. In particular, the work launched in Madagascar under the Energy Initiatives for Africa sub-project on mini-hydropower for agroprocessing should be continued as indirect assistance to rural women.

7. Increased availability of child health care services through greater EPI coverage and through maternal and child health care services which include family planning services.

Local currency funds should be available for viable proposals that expand and improve the EPI coverage, in collaboration with UNICEF assisted activities. In addition, local currency funds might be made available to support activities under the proposed GDRM/UNFPA maternal and child health care project which includes provision of family planning services. AID should only approve requests for financial assistance when directly related to health centers which provide family planning services. The activities under this objective should be chosen on their soundness and the feasibility of managerial support through the on-going programs of other donors.

8. Increased acceptance of family planning by the GDRM and greater coverage of family planning services.

The population strategy should aim at encouraging a favorable GDRM policy towards family planning together with stimulating a greater demand for assistance in the area of family planning. These two objectives are considered as mutually reinforcing. It is considered prudent for AID to proceed with sensitivity to the political and social context so as to develop a sound climate for family planning services in Madagascar. The strategy ought to consist of (a) increasing the awareness of policy makers to the implications of rapid population growth to attainment of Madagascars stated development goals, (b) improving the availability of demographic data to support (a), and (c) strengthening the family health services delivery in public and private sectors through training and provision of needed medical supplies and equipment for family planning services. The family planning objective should be addressed through centrally-funded projects.

Of immediate importance is assistance to the State Data Bank for planning the forthcoming population census.

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