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# FOOD SECURITY STRATEGY

USAID / Madagascar

Finalized by Food Security & Disaster Unit July 1998

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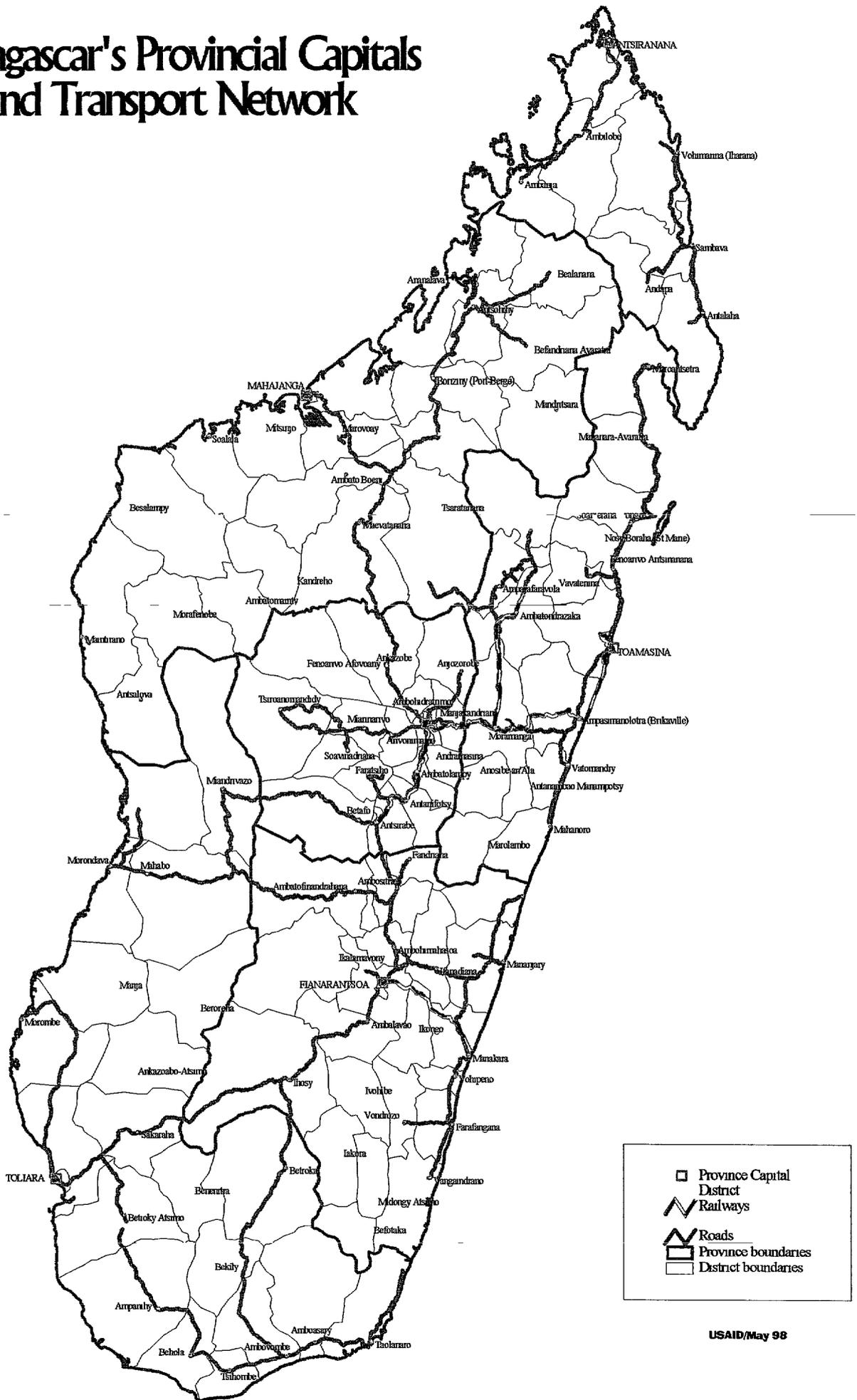
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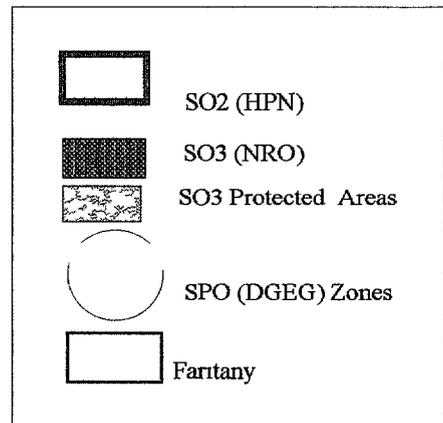
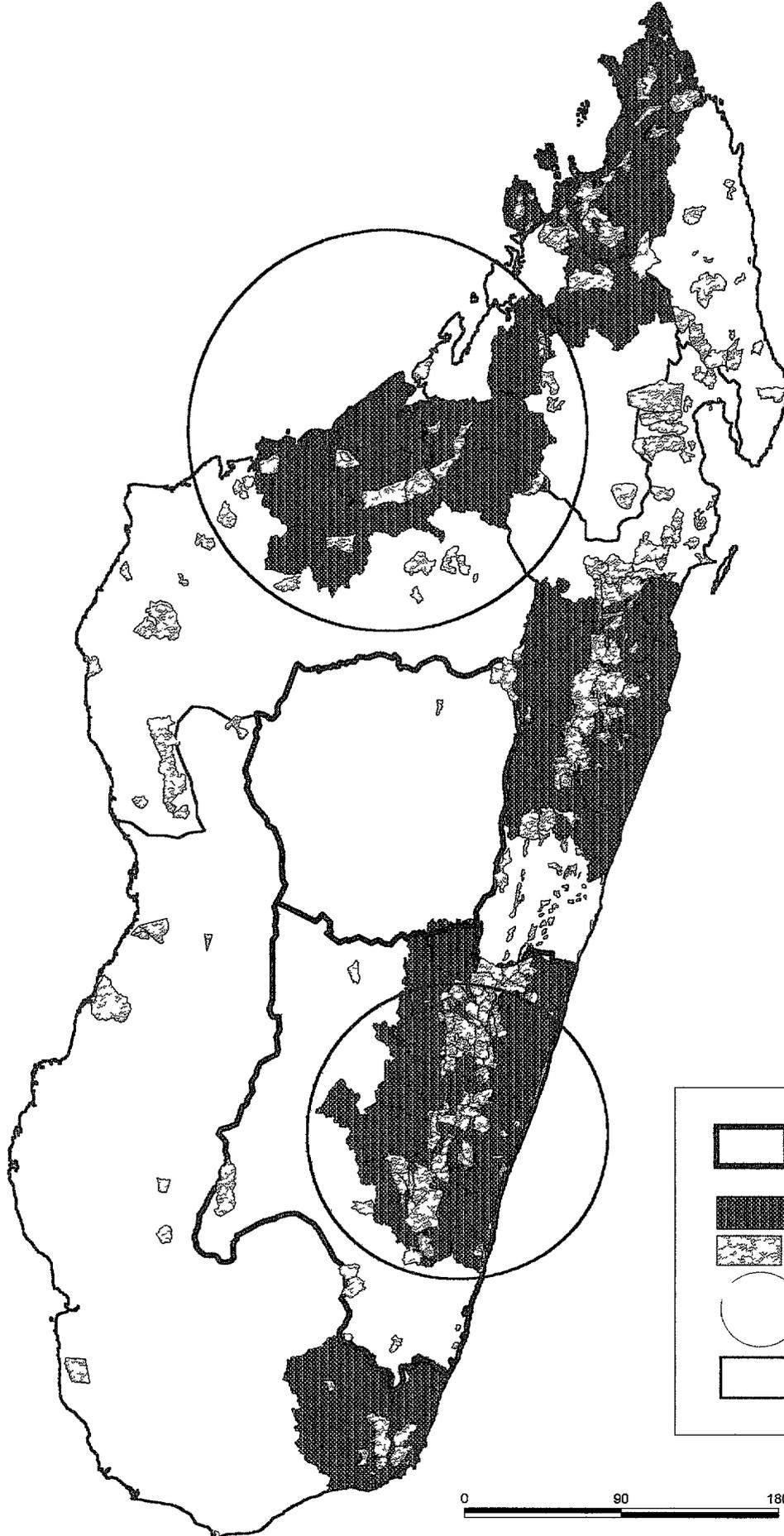
ADRA	Adventist Development Relief Agency
AELGA	Africa Emergency Locust Grasshopper Assistance
ASN	Agricultural Strategy Note
BASICS	Basic Support for Institutionalizing Child Survival
BCC	Behavior Change Communication
CAP	Commercial Agricultural Promotion
CNS	Conseil National de Secours
CRIC	Cellule Restreinte d Intervention aux Catastrophes
CRS	Catholic Relief Services
CSB	Corn Soy Blend
CSO	Country Strategy Outline
CSP	Country Strategic Plan
CWS	Church World Services
DA	Development Assistance
DCPE	Document Cadre de Politique Economique
DHS	Demographic Health Survey
DPV	Departement de Protection des Vegetaux / Department of Crop Protection
ESAF	Enhanced Structural Adjustment Facility
EU	European Union
FACS	Food Assisted Child Survival
FAO	Food and Agricultural Organization
FED	Fond Europeen de Development / European Development Fund
FFW	Food For Work
FSS	Food Security Strategy
GDP	Gross Domestic Product
GOM	Government of Madagascar
GTZ	German Development Organization
IDA	Iron Deficiency Anemia
IDD	Iodine Deficiency Disorders
IFPRI	International Food Policy Research Institute
IMCI	Integrated Management Childhood Illness
IMF	International Monetary Fund
INSTAT	Institut National de la Statistique
IRRI	International Rice Research Institute
IVACG	International Vitamin A Consultative Group
MCDI	Medical Care Development International
MICS	Multiple Indicator Cluster Survey (UNICEF 95)
MOH	Ministry of Health
MSF	Medecins Sans Frontieres / Doctors Without Borders
NAC	Nutrition d Assise Communautaire
NGO	NonGovernmental Organisation
OFDA	Office of Disaster Assistance
PIN	National Indicative Program
PIP	Public Investment Plan
PMPP	Prevention Mitigation Preparedness Planning
PNNC	Programme National de Nutrition Communautaire
PNSAE	Programme National de Securite Alimentaire Elargie
PSO	Projet du Sud Ouest/South West Project
PSSA	Programme Special de Securite Alimentaire
PVO	Private Voluntary Organisation
SAP	Système d Alerte Precoce
SD	Standard Deviations
UNICEF	United Nations Children s Fund
WFP/PAM	World Food Program
WHO	World Health Organisation

# Madagascar's Provincial Capitals and Transport Network

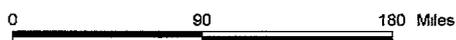


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# USAID/Madagascar Focus Areas of 3 Strategic Objectives

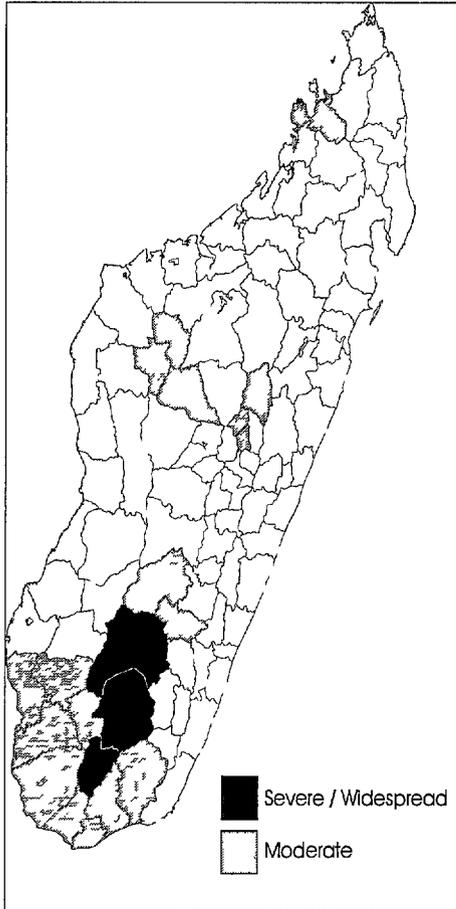


USAID/Antananarivo

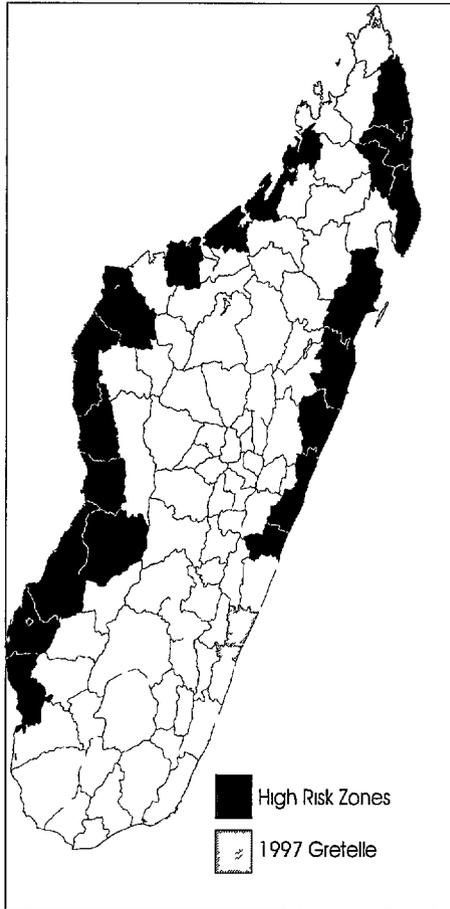


# Madagascar: 3 potential disasters each year

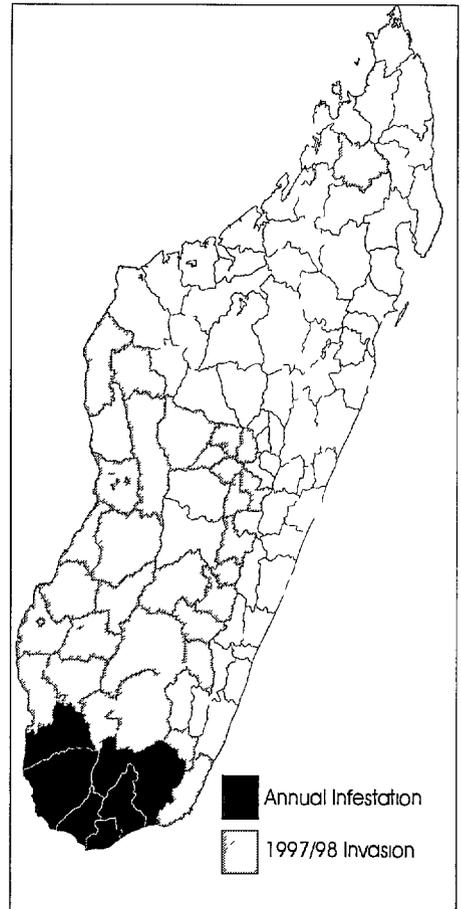
## DROUGHT



## CYCLONE / FLOODING



## LOCUSTS



Drought-vulnerable areas make up 15% of the nation's population, 14% of the annual rice production and 16% of the annual maize production. The two most severe droughts were in 1982/83 and 1991/92. El Niño related droughts occur every 2-7 years with varying impact on agriculture and lives.

Over 20% of the nation's population live in cyclone vulnerable areas. Over 30 cyclones have ravaged Madagascar since 1972, causing over 1,000 deaths. Over five major flood events, attributed mostly to cyclones, have occurred over the same time frame. Antananarivo, Toliara, Mahajunga and Morondava are most vulnerable to flooding.

In a normal year, locusts endanger 2% and 10% of the national rice and maize harvests, respectively, and make 6% of the population vulnerable. When uncontrolled, locusts have flared up beyond the black zones 19 times over the past 20 years, reaching Antananarivo in both 1977 and 1984. The current 1997/98 invasion has endangered up to 30 and 68% of the rice and maize harvests and has made vulnerable up to 35% of the population.

# PL480 Title II Monetization Zones



# 1. PARAMETERS OF THE FOOD SECURITY STRATEGY

## 1.1 Definition and Determinants of Food Security<sup>1</sup>

### 1.1.1 Definition of Food Security

USAID defines *food security* as follows

When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life

By this definition, food security is a broad and complex concept determined by the interaction of a variety of agro-physical, socio-economic and biological factors. USAID recognizes that in the poorest developing countries, food security for all is a long-term objective to be attained through sustained economic growth. The contribution of USAID programs to food security is greatest when the host country is committed to economic and social policies that promote a broad-based pattern of growth.

### 1.1.2 Determinants of Food Security

There is no single, direct measure that fully captures all elements of food security. However, the complexity of the food security problem can be simplified by focusing on three distinct, but inter-related dimensions of the concept: food availability, food access and food utilization. According to the USAID definition:

Food **availability** is achieved when sufficient quantities of food are consistently available to all individuals within a country. Such food can be supplied through household production, other domestic output, commercial imports or food assistance.

Food **access** is ensured when households and all individuals within them have adequate resources to obtain appropriate foods for a nutritious diet. Access depends on income available to the household, on the disposition of markets and farm-to-market infrastructure and on the resulting price of food.

Food **utilization** relates to a diet providing sufficient energy and essential nutrients, potable water and adequate sanitation, all assuring biological absorption. Effective food utilization depends in large measure on knowledge of food storage and processing techniques, basic principles of nutrition and proper childcare, and illness management.

Achieving adequate food security is an important aspect of the more general development objectives of improved human well-being, the alleviation of poverty and sustainable, broad-based economic growth. Achieving food security requires that

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<sup>1</sup> Most definitions are adapted from the USAID 'Food and Food Security' Policy Paper (1994) and its attachments. Sections 1.1.3 and 1.1.4 are adapted from the USAID Strategy to Improve Food Security in Haiti (1997).

- the aggregate availability of physical supplies of food is sufficient
- households have adequate access to those food supplies either through their own production market systems or other sources, and
- the utilization of those food supplies is appropriate to meet the specific dietary and biological needs of individuals

### 1 1 3 Time Dimension of Food Security

Food insecurity can be chronic or transitory, both types are closely related. Chronic food insecurity is characterized by a consistently inadequate diet, and its roots are in poverty. Transitory food insecurity, on the other hand, is a temporary decline in a household's access to food, due to instabilities in production, income, employment and/or prices. Typically, the chronically food insecure are hit hardest by transitory food shortages.

### 1 1 4 What Food Security Is Not

Food security differs from

#### **Food self-sufficiency**

There is no necessary link between national food self-sufficiency (when adequate quantities of food crops are grown locally and not imported) and national food security. Since most foods can be traded internationally, national self-sufficiency only makes sense when there is a comparative advantage in producing food versus other cash commodities. In fact, empirical studies tend to confirm that food self-sufficiency has no intrinsic value in eliminating chronic food insecurity. In some countries, excessive concern with food self-sufficiency has led to costly and uneconomic investments. These investments have tended to undermine not only per capita income growth, but also food security itself, by diverting resources from otherwise productive uses.

#### **Agricultural Development**

A food security strategy helps identify food insecure populations and ways to promote their access to food. In many cases, one of the better ways to increase access of these populations to food is to stimulate agricultural productivity and diversification. Additionally, since demand for rural non-farm goods and services often stems from the agricultural sector, food security may depend in part on increased agricultural growth. Even in rural areas, however, the need to find ways to assist at-risk households to generate income often moves the scope beyond the agricultural sector, into more generalized rural development. Oftentimes, limited land and other resources make off-farm options more promising for certain households than typical agricultural activities.

#### **Broadly Based Economic Growth and Poverty Alleviation**

Reducing food insecurity requires more than a commitment to broadly based economic growth and poverty alleviation, although the three are closely related. A strategy directed to the achievement of broadly based economic growth typically has a countrywide scope and a long-term timeframe, while a food

security strategy may be more focused. A strategy directed toward poverty alleviation, like a food security strategy, may target the poorest or most vulnerable geographical or socio-economic populations, but is generally a long-term undertaking. Sustainable food security typically parallels sustainable economic growth.

### **Feeding Programs**

Feeding Programs are not synonymous with food security. Rather, they are merely one particular localized response to noted chronic or acute food insecurity.

## **1.2 Objectives and Methodology**

The objectives of this Food Security Strategy (FSS) are fourfold:

- To determine the nature and scope of Malagasy food insecurity and constraints to improved security
- To redirect the focus of food security responses in Madagascar from relief to development
- To define the USAID Madagascar contribution to enhanced food security in Madagascar and
- To demonstrate the depth of integration of the USAID Madagascar Strategic Objectives in making that contribution

The methodology used in development of the Food Security Strategy, and structure of the document is described below. To develop this strategy, USAID/Madagascar undertook a thorough process that included reviews of

- Relevant GOM policies and structures
- The current dimensions of food insecurity in Madagascar
- Lessons learned from the impact (or lack of apparent impact) on food security of past and existing projects and activities supported by USAID and other donors
- Food security strategies developed by other USAID Missions
- Complementarity with new or planned programs of the GOM and other donors
- The relevance and contribution of USAID/M strategic objectives to improvements in food security and
- The role that PVO partners will fulfill through Title II Monetization programs just coming on stream

A bibliography of all documents used in the development of the Food Security Strategy is provided in Annex B.

Chapter 2 summarizes the development context in which the Food Security Strategy will be implemented. It summarizes the USAID Madagascar Country Strategic Plan (CSP) for the period 1998 to 2002 and the Government of Madagascar (GOM) Food Security Strategy, which guide planning for a more specific focus on USAID food security efforts.

Chapters 3, 4 and 5 examine the determinants of food insecurity in Madagascar constraints to availability, access, and utilization of food Chapter 6 assesses the role of recurrent disasters in creating food insecurity and presents planned activities in disaster prevention, preparedness, mitigation, and prevention (PMPP) These chapters draw upon many existing studies of food security and the experience and practices of USAID partners Several Private Voluntary Organizations (PVOs) involved in the USAID P L 480 Title II Food Aid program and many contractors and non-governmental organizations (NGOs) work with USAID strategic objective teams

In Chapter 7, USAID/Madagascar's Food Security Strategy is presented It builds on the analyses presented in the previous chapters and on the 1998 to 2002 Country Strategic Plan (CSP) as well as the Title II Monetization programs of USPVOs active in Madagascar (ADRA, CARE and CRS) This strategy centers on USAID's manageable interest and refers to complementary resources where appropriate Chapter 7 also defines the choice of targeted vulnerable populations

A number of boundaries have been placed on this strategy USAID Madagascar is a "Limited Mission" and as such is focusing its program in content and approach Many of its implementing partners have multiple sources for support and independent modes of operation that influence their results The level and type of support available to the Mission is also evolving and any strategy must take into account fluid staffing, funding and other constraints To insure maximal complementarity, this strategy was designed by studying other local donor efforts Finally, while political stability has recently improved, climatic conditions remain significant determinants of food security Disaster preparedness is a prudent element of any food security strategy, particularly so in Madagascar In short, there exist many challenges for the country and for all donors The assessment of food security, therefore, must consider the "vulnerability" of millions of Malagasy in several parallel dimensions as they work to improve their livelihoods in sustainable ways

## 2. STRATEGIC CONTEXT

### 2.1 USAID Country Strategy

Following recommendations of its Country Strategic Plan (CSP) review last year, USAID Madagascar has focused its program around one *Goal Reduced Poverty*. This conforms to the goal of the Government of Madagascar's (GOM's) structural adjustment program "to improve the investment climate and reduce poverty". USAID plans to monitor progress toward achieving its goal of reduced poverty with two indicators: i) a decrease in the percent of the population considered absolutely poor<sup>2</sup>, and ii) an increase in the percent of children who show no sign of stunting<sup>3</sup>.

Analyses in subsequent sections of this Food Security Strategy demonstrate that food access, particularly purchasing power, is the most critical determinant of food security in Madagascar. Households cannot become more food secure without also becoming less poor. Thus, increasing food security is a corollary to reducing poverty, and will be addressed on a crosscutting basis by all USAID special program and strategic objective teams.

To progress toward its long-term poverty alleviation goal, and its more medium-term food security corollary, USAID Madagascar is focussing on *three objectives*:

- Special Program Office (SPO) Improved environment for private initiative
- Strategic Office (SO) 2 Smaller healthier families
- Strategic Office (SO) 3 Biologically diverse ecosystems conserved in priority conservation zones

During FY 1997, in support of these objectives USAID obligated a total of \$16.25 million in Development Assistance (DA), including \$3.3 million for child survival and disease, and an additional \$3.62 million in P.L. 480 Title II funding. The measurable results each SO team hopes to achieve are briefly summarized below. A matrix summarizing their contributions to enhancing food security is provided at the end of this section.

USAID plays a significant role in improving the environment for private initiative (Special Program Objective, or SPO) in support of Madagascar's Structural Adjustment Program. Its specific areas of emphasis are:

- fostering improved legal, financial, and policy conditions for trade and investment, and
- more informed and responsive public participation in economic and legal issues.

In terms of food security, the SPO contributes to both improved food availability and food access through its economic analysis and policy dialogue activities. It also promotes savings and thus improved purchasing power through the National Savings Bank.

<sup>2</sup> The World Bank, *Madagascar Poverty Assessment*, June 1996, p.12

<sup>3</sup> Only 49 percent of children were not stunted according to the 1992 Demographic and Health Survey or DHS. Data from the 1997 DHS are expected to be available in mid 1998 and will permit analysis of progress against the baseline.

USAID efforts at conserving biologically diverse ecosystems in priority conservation zones (SO3) seek compatible ways to meet the resource needs of an expanding population without compromising the diversity of its biological resources. The key results that USAID seeks to achieve in this sphere are

- improved management of critical biodiversity habitats
- sustainable use of natural resources in broader landscapes
- domestic financial mechanisms mobilized and
- supportive environmental policies and procedures

In terms of food security, SO3 focuses primarily on increasing food availability, and to a lesser extent, food access. Activities under SO3 have opened productive areas of Madagascar to increased agricultural trade opportunities, and have promoted agricultural production and local processing of crops, thus increasing food availability on a sub-national basis. All SO3 activities focus on increasing intensive agricultural practices and thus land productivity in a sustainable and low cost manner. This in turn keeps prices favorable to consumers, thus contributing to improved food access for the whole population.

Finally, USAID helps achieve smaller, healthier families (SO2) through support to child survival, population, nutrition, and HIV/AIDS prevention and awareness, based on several years of success. It is currently focussing on achievement of the following results:

- Increased use of services and healthy behaviors (Family Level)
- Increased community participation leading to improved health and food security (Community Level)
- Increased access to quality health services (Health Center Level)
- Increased capacity to plan and manage programs (Institutional Level)
- Improved policies, program advocacy, and decision making (Policy Level)

SO2 activities influence Madagascar's food security by addressing the food utilization of pregnant and lactating women and children under five years of age. PVO partners tap resources of P.L. 480 Title II commodities and monetization to address nutrition issues. SO2 supports a nutrition advisor who oversees the nutrition activities of bilateral and Global Bureau geographic-specific child survival grants that promote improved absorption of necessary protein, calories, and essential micronutrients. A major institutional contract will be awarded in FY 1998 to provide assistance to the Malagasy Ministry of Health and the PVO / NGO community to improve the quality of child survival and nutrition activities nationwide. Finally, SO2 houses the Mission's new Food Security and Disaster (FS/D) Unit, which monitors food security indicators and promotes preparedness, mitigation, prevention and planning (PMPP) for short-term food shortages due to cyclones/floods, locusts, and droughts that continue to plague Madagascar.

Figure 1 shows that the three USAID Madagascar objectives each currently contribute to two or more key components of food security as part of their overall

strategic management plan Targeting activities to highly vulnerable groups for greater impact will be discussed in more detail in Chapter 7 of this report

	AVAILABILITY	ACCESS	UTILIZATION	DISASTERS
<b>SPO</b>	Economic analysis of the determinants of agricultural productivity and rural household welfare	Economic analysis to inform policy decision making in support of poverty alleviation TA other support to National Savings Bank to improve purchasing power		Communications Leland Initiative to foster PMPP
<b>S02</b>	Targeted PL 480 Title II assisted monetization activities increased soil fertility reduced erosion and burning	Targeted PL 480 Title II assisted monetization activities income generation and improved market knowledge	Nutrition Behavior Change Activities PL 480 Title II Food Assisted Child Survival (FACS) activity Immunization and other CS and population activities	PL 480 Title II assisted monetization activities PMPP in disaster prone communities
<b>S03</b>	Rice research and increased productivity Intensification of high-value crop production and processing Grants to community groups for soil and water conservation Support to University of Agriculture	Farm to-market road rehabilitation and maintenance Agri-business Management Training		Organic pesticide development and dissemination (locust mitigation)

Figure 1 Summary of Current USAID Madagascar Activities to Enhance Food Security

## 2.2 Government of Madagascar Food Security Strategy

On December 4<sup>th</sup>, 1997, the Government of Madagascar's Office of the Prime Minister endorsed the first National Food Security Strategy. The three main axes of the National Food Security Strategy reinforce USAID's concept of Food Security as determined by availability, access, and utilization.

The National Strategy embodies principles that are consistent with USAID policy, including sound and updated problem analysis and action at appropriate levels related to the needs of particular areas and vulnerable groups. At the same time, it calls for national expertise and coordination and integration of the various actions, with special attention to enlisting participation of the affected population. Following international trends, it promotes disengagement of the state in favor of the private sector, prioritization of actions, and openness to all possible measures to meet the needs of vulnerable populations.

The first component of the GOM Strategy promotes food availability in a favorable socio-economic environment, improving efficiency and developing private initiatives in rural areas. The focus of this component is on a number of agricultural sub-sectors, including credit, water, environmental protection, agricultural inputs, commercialization, and agricultural technology. It also aims to provide a favorable environment for the private sector to flourish in the rural areas and to promote investments and employment. Commercialization of

agriculture, export crops and commodities (including livestock and fisheries), and technological improvements are part of this component. This includes preservation and rational exploitation of the natural resources in sustainable ways.

The “food availability” component could be described as empowerment at the most basic level. It aims to provide institutional and policy support to the state administration, NGO and community levels. Through legislative action, infrastructure development, training, basic education, and related support this component aims to remove some of the underlying impediments to availability.

The second main component of the National Strategy aims to improve physical “access” to food through improved markets, better flow of information about markets, and improved purchasing power.

The third main component closely relates to the USAID “utilization” component and addresses the need to improve food intake by promoting and advocating improved quality and quantity of consumption. In addition to research, better information and education, this element also aims to improve the health of the population by improving primary health care and specific nutrition programs including micronutrients. This component also recognizes the need for better hygiene, water and sanitation.

### **2.3 Strategic Alignment to Increase Food Security**

The USAID CSP and the GOM Food Security Strategy are compatible and complementary. Both view improving food security as a corollary objective to reducing the level and impact of poverty of the Malagasy population. Both recognize that food insecurity is a major symptom of poverty: poor households have difficulty obtaining the means of production and/or funds to purchase adequate amounts and types of food to satisfy nutritional needs, while poor health and lack of information contribute to poor utilization of available foods.

USAID Madagascar’s challenge is to identify appropriate measures to address the food security of key groups in the medium term, while the longer-term CSP and GOM poverty reduction measures come to fruition. The following chapters provide the background analyses that support our program choices to enhance food security.

### 3. FOOD AVAILABILITY: NATURE, SCOPE & CURRENT EFFORTS

Madagascar's overall volume of food production in recent years has not kept up with population growth, estimated at 2.8 percent. Thus, although Madagascar is considered cereal self-sufficient at the aggregate, or national level (total rice imports rarely exceed six percent of rice consumed), this does not necessarily indicate food self-sufficiency. As described below, the aggregate level disguises both a host of sub-national gaps and purchasing power that remains insufficient to stimulate production.

Food supplies are made available in Madagascar through three primary venues: agricultural production, fishing / livestock and commercial and food aid imports. The contribution of each of these to overall food availability is described below.

#### 3.1 Agricultural Production

Direct agricultural production accounts for approximately 33 percent of Madagascar's GDP and employs about 80 percent of the labor force. Food production serves both as a source of food for the producers and a major source of income. To date roughly four percent of Madagascar's total landmass of 587,041 km<sup>2</sup> is under cultivation and some experts believe that another nine percent of the total landmass is arable. Rarely more than 65 percent of the arable landmass is actually cropped during any given year. For large parts of the country, food availability fluctuates seasonally and increasing population pressure coupled with traditional farming practices (slash and burn) aggravates the food availability situation while often contributing to environmental degradation.

Cereals, predominantly rice, dominate production in Madagascar. Rice production has been maintained relatively constant, while production of other foods has not increased substantially. Rice and maize are both sold domestically and exported to other countries in the region. A major constraint to efforts at improvement of food availability is the dearth of accurate national agricultural data. Since 1994, annual figures of area planted, tonnage produced and yield are mere Ministry of Agriculture projections from previous years. The European Union is working to strengthen the Ministry of Agriculture data collection system and aim for more dependable figures in the 1998/99 season. USAID is funding research by the International Rice Research Institute and the International Food Policy Research Institute, with the Malagasy agricultural research organization (FOFIFA), which will also contribute new yield and production estimates for focussed areas of the country.

Agricultural conditions vary across the country, but are characterized by generally poor soil fertility and low crop yields. Mahajunga Province and the Lake Alaotra area of Toamasina Province form the breadbasket of Madagascar. The northeastern portion of the country is known for the production of export crops such as vanilla and coconuts, but the discouraging fluctuation and decrease of world prices for these commodities has until recently sent many smallholders back to subsistence farming. Productive soils are scarcely distributed across the landscape and concentrated close to streams and

riverbanks Generally, however, the soils of Madagascar are old, highly weathered, acidic, iron-oxide rich with low reactivity clays Soils are also not fertile in the south where the semi-arid climate exacerbates low water retention capacity In the south, mixed agro-pastoral systems are suitable Rice crops (annual single harvest) are typically harvested May through July (with regional variability) and maize crops March through May

Presently land rights can be transferred and inherited, and improvements can be made, but land cannot readily be sold Occupants may be unwilling to make improvements on the land they farm because of the potential of losing the land if they are squatting on it, or if its ownership is in dispute Non-owners are also not likely to promote sustainable use of natural resources Land tenure is a nation-wide concern, a background issue for most farmers Before they can secure clear title to the land they work, they often must satisfy the whims and the requirements of central government, local government, and traditional leaders Problems arise when numerous people --descendants of pre-colonial occupants, colonial owners at independence, migrant workers and displaced persons (squatters)-- lay claim to the same land

To complicate matters further, the low fertility of the land on the highlands supports a fallow-system of agriculture where land is cultivated for four to five years and left fallow for 15 to 20 more years Both fallow periods, necessary for soil restoration, and plot sizes are decreasing as populations grow Thus, though a traditional farmer may only cultivate two to four hectares at any one time, (s)he needs 15 to 20 hectares to maintain soil fertility over the long term In 1994, 57% of rural households exploited less than 0.5ha each This decreasing ability to keep lands fallow for sufficient periods, coupled with slash and burn agriculture, leads to rapid decreases in soil fertility

Smallholder farming has long been extensive rather than intensive in nature and there is great concern for the ever-diminishing natural resources as farmers extend cropping onto steep hillsides and into forested areas With proper practices, the potential for increased agriculture production is great The World Bank, along with the GOM, argues that the rural development policy based on intensification of the small farm sector in the high potential, densely populated areas of Madagascar will accelerate the development of the entire non-farm economy

A low level of inputs for cultivated fields contributes to low yields Average rice yields are estimated to be between one to two tons per hectare—considerably below the four tons per hectare found when improved varieties and other agricultural inputs are used in India Few smallholders use or purchase inputs except for hoes, axes and machetes The availability and use of improved varieties, and use of animal traction is less than adequate Even if funds were available to farmers for the purchase of inputs, such as fertilizer, the distribution system of inputs to the rural areas is weak

Surveys of on-farm storage suggest that little is kept on farm as farmers sell crops, purchase food or barter for other goods throughout the year Moreover, post harvest losses of food (storage, handling and processing) are estimated to be as high as 25 percent This figure increases with certain crops and varies throughout the agricultural season It is apparent, however, that for household food security to be achieved, well-targeted improvements to on-farm storage and handling are critical

### 3 2 Livestock and Fishing

Livestock and fishing account for a significant part of food production and trade. The use of wild foods, especially in the south, is also an important seasonal source. With the reduction in forest and savanna, access to these important sources is under threat.

Livestock, in the form of cattle, pigs, goats, sheep and poultry, is a significant part of the Malagasy livelihood and a potentially important element of food security. In Toliara province, where agriculture is more problematic, livestock incomes often replace and definitely supplement agricultural incomes. The *zebu* cattle breed is a common symbol of Malagasy livelihood, and it is often suggested that Madagascar is home to a population of zebu equivalent to that of human inhabitants. However, only 6.4 million were presented for vaccination in 1993, representing a reduction of nine percent in live zebu since 1983. Since 1983, only pork and poultry populations have increased while sheep and goat populations have been reduced by more than half.

Although animal production is an important source of reserve cash, and a major occupation in many rural areas, livestock consumption is commonly reserved for special occasions and social obligations and contributes very little to the typical Malagasy diet. Out of a minimum daily requirement of 2300 kilocalories in 1993, any meat product provided only 47. Cattle breeding is most common in the Provinces of Mahajunga and Toliara, together home to 61 percent of the national zebu population. In these provinces typical herds contain between 30 and 80 head of cattle (in the other provinces herds range in size from three to 18 head). Toliara Province is also home to the greatest proportion of pig production (32 percent, followed by Antananarivo) and 83-91 percent of the small ruminant population. Poultry breeding is most common in Fianarantsoa Province (home to 27 percent of the poultry population in 1993) followed by Toamasina (23 percent) and Mahajunga (18 percent).

Coastal and deep-sea fisheries are important sources of food and income, sold both domestically and internationally. Annual fish and shellfish harvests, although as yet under-exploited by the Malagasy population, contribute to food security and daily diets to some extent in every province, both coastal and landlocked. Production each year is estimated at roughly 120,000 tons in 1995, which is twice the production levels documented in the 1980s and steadily increasing each year. Fish exports have risen since 1988 and in 1993 totaled about 20,000 tons. As discussed in more detail in Chapter 5, although an estimated eight kilograms per capita of edible seafood is available after exports and losses each year, only 5.4 kg of the total is actually consumed.

### 3 3 Imports Commercial and Food Aid

Since 1990, Madagascar has imported very small amounts of commercial foods mainly rice, oil and wheat flour. As noted above limited food imports create the impression of a food self-sufficient Madagascar. Between 1990 to 1994, rice made up just over 5.5 percent and oil one percent of the total tonnage of imported goods (4 percent and 1.2 percent, respectively of total value of such

goods) Through 1994, commercial and food aid imports together never exceeded six percent of the rice consumed in Madagascar

Units=mt	1990	1991	1992	1993	1994
Production of Paddy (Net)	2 203 200	2 149 956	2 249 100	2 340 900	2 163 726
Equivalent Rice (67 percent)	1 476 144	1 440 471	1 506 897	1 568 403	1 449 696
+ Commercial Imports	53 969	31 300	52 413	15 469	79 847
+ Food Aid Imports	5 607	3 853	6 895	6 753	6 515
- Exports	401	776	1 142	1 525	1 288
Consumed Domestically	1 535 319	1 474 848	1 565 063	1 589 072	1 534 770
Total Imports, as percent of Consumed	3.9	2.3	3.7	1.3	5.6

**Table 1 Rice Imports (Commercial and Food Aid) as a percent of Total Rice Consumption (1990-1994)** Source Adapted from European Union (1996)

Food aid (Table 2) has historically represented a small percentage of rice imports or less than one percent of total production (see Table 1) However, it contributes annually to food availability in targeted geographic regions and among specific population cohorts Over the past decade, Title II commodities from the U S have made up a significant 30 to 40 percent of all food aid imports Other major regular food aid donors includes the EU, France and Japan USAID has principally imported corn/soya blend (CSB) for child feeding, vegetable oil and rice Around 88 percent of food aid coming to Madagascar is in the form of cereals, of which roughly 40 percent is in the form of maize or rice (two of the principle staple foods of Madagascar) The remainder of food aid is made up of a range of commodities including vegetable oil, milk, sugar and beans

Excessive quantities of maize imported as a response to one of the most severe droughts this century --1991/92-- created a marked disincentive to local production of maize over the following years In 1995, a large quantity of rice was again imported (16,058 tons) to attenuate the 1994/95 drought Since then, donors have sought to import only commodities not likely to hinder local production efforts or fledgling sub-sector enterprises<sup>4</sup> Donors now regularly import wheat flour and vegetable oils In 1995 and 1996, respectively, 12,667 and 9,000 tons of wheat flour were imported as part of an almost 40,000 ton package of food aid

Source of Food Aid	1992	1993	1994	1995	1996	1997
CEE	33,620	11 907	1 885	7 957	8 564	7 500
US Title II	17,185	8,955	8,825	14,415	6,910	2,272
(US percent of total)	(26%)	(33%)	(43%)	(37%)	(33%)	(15%)
Japan	-	3 652	1 258	8 217	-	5 771
France	-	-	3 845	3 868	3 848	2 920
Holland	4,943	-	110	2 750	400	-
Sweden	6 238	135	319	-	-	-
Other	-	-	-	-	1 165	631
<b>TOTAL</b>	<b>65,589</b>	<b>27,288</b>	<b>20,459</b>	<b>38,976</b>	<b>20,887</b>	<b>14,738</b>
(% in Staple Rice and Maize)	(36%)	(30%)	(32%)	(41%)	(20%)	(63%)

**Table 2 Donor Food Aid Imports (Mts)** Source WFP

<sup>4</sup> The annually updated Bellmon Determination prepared in 1997 for PVO Monetization Programs cites all commodities to be brought in under the Title II Monetization program This analysis demonstrates that the importation of Crude Degummed Soybean Oil and bulk Wheat (and other commodities for distribution to malnourished vulnerable groups) does not constitute a disincentive for local production

### 3.4 Current USAID Efforts to Improve Food Availability

USAID is supporting a number of efforts to increase food availability in Madagascar. Its focus is on promoting environmentally friendly, sustainable agriculture. Following its emphasis on sustainable use of natural resources in broader landscapes (SO3's IR3.2), USAID partners are working in conservation priority zones that include protected areas and extend regionally from their periphery (national parks, reserves, forests). In organic production of pesticides and fertilizer, those partners also work on the national level. In general, USAID promotes intensification of use of arable land by better practices and diversification of crops, and discourages traditional extension of cultivation by slash and burn methods.

USAID funds the local rice research program led by the International Rice Research Institute (IRRI) in collaboration with the national agriculture research institute, FOFIFA. IRRI and FOFIFA address biophysical, economic and social sustainability issues in rice production. These are all elements of a sustainable intensified farming systems program that is desperately needed in Madagascar. The program, which began in the early 1980's, generates technology and new varieties to address constraints to rice production. Some examples of these constraints include poor weed control, poor water management, lack of improved seed, and phyto-sanitary problems in the field and during storage. IRRI and FOFIFA are developing technologies that are then tested with farmers, NGOs, and the extension service. IRRI is helping FOFIFA to regionalize their efforts using a more participatory approach to assure that its work responds to the needs of farmers.

In focus areas within Madagascar, IRRI has released 16 new varieties of rice (all resistant to local viruses) from its plant-breeding program over the last 15 years. This type of research is long-term in nature, there are no quick fixes. The IRRI/FOFIFA teams have focused on intensification, through better water management for multiple crops per season. With intensification come increased labor requirements and the need for some type of mechanization. In response, IRRI and FOFIFA have developed labor saving equipment such as seeders, weeders, threshers and puddlers. Without access to this new technology, farmers open up more hillside plots where they use poor soil erosion control measures and thus exacerbate the rate of environmental degradation, or else they simply open up more forest land.

USAID supports a number of other efforts that increase food availability. Madagascar has some of the most infertile soils in the world, making improvements in agricultural productivity difficult. Improving soil fertility will positively influence productivity in a sustainable way. One of the USAID-supported technologies is the use of composts and mulches as alternative sources of plant nutrients, applicable to almost any locality. The second, promotion of vetiver grass to prevent erosion and protect infrastructure (such as irrigation canals) also protects farm-to-market roads from the same danger. A third technology that USAID is promoting in Madagascar is certified organic production for export, it is one of the few agricultural technologies that joins environmental protection and agricultural production. Organic producers must demonstrate that they use environmentally friendly agricultural practices to obtain certification for western markets, where high premiums are paid for organic products.

Another mechanism used by USAID support to the agricultural university, aims to generate a new cadre of agricultural specialists who will help improve production technology. Research areas supported by USAID include testing local plants as natural insecticides for post-harvest storage protection, industrial composting for larger scale commercial farmers, and the introduction of new value-added products, especially essential oils, some of which sell overseas for several thousand dollars a kilogram.

Locusts cause substantial crop damage on a recurring basis in Madagascar and USAID has been instrumental in improving knowledge and practices on locust control. An endemic pathogen has been discovered and tested against migratory locusts here over the past five years. The pathogen has only one host - locusts-, and has no known toxic effects on any other non-targeted organism.

The pathogen can be grown on rice hulls and can be stored for up to three years. Currently in the final testing phase, this technology may be transferred to the private sector. In future years, the bio-pathogen could be made available for routine locust control programs. See Chapter 6 on disaster for more details.

PVO partners are also active in increasing food production / availability. The Adventist Development and Relief Agency (ADRA) is taking the lead in a new P L 480 Title II umbrella monetization program in 1998. As monetization gets underway, proceeds will be used by ADRA, CARE, and CRS to finance a number of activities focussed on increasing food availability, as well as access, utilization, and sustainable natural resource management, among highly vulnerable population cohorts.

Other donor, PVO and NGO support for food availability is detailed in Annex A. USAID supports the GOM and its partners in undertaking these efforts. We note, however, that until there is significant private sector investment and market-driven impetus to improve crop yields, agriculture and livestock production in Madagascar will continue to stagnate and/or decline relative to population growth. These factors are dependent on measures to be undertaken as part of the structural adjustment program, and as such are largely outside USAID control.



## 4. FOOD ACCESS: NATURE, SCOPE & CURRENT EFFORTS

The root causes of inadequate food access in Madagascar can be summarized as poverty and lack of purchasing power, inadequate infrastructure and market knowledge/development, and inappropriate economic and market policies. Food access is the household's ability to obtain or acquire sufficient quantity and quality of available food. It is primarily an issue of increasing and stabilizing income so that households can either produce or purchase sufficient food to cover their nutritional needs. Initiatives to reduce the costs of food processing and distribution will also improve food access. Low per capita income levels and starkly unequal distribution of that income complicate access to food for most of Madagascar's 14.2 million people (1998).

### 4.1 Poverty and lack of purchasing power

With a GDP per capita of \$230 in 1997, Madagascar is among the poorest countries of the world. The UNDP human poverty index ranks Madagascar 70<sup>th</sup> out of 78 developing countries in terms of the percentage of its population meeting minimum basic needs<sup>5</sup>. According to recent estimates, about 70 percent of the total population live below the poverty line<sup>6</sup>. The incidence of poverty is higher in rural areas than in urban areas. 77 percent of the rural population is poor compared to 47 percent in urban areas<sup>7</sup>. Female-headed households are slightly more likely to be poor than male-headed households<sup>8</sup>. Poverty is particularly reflected in the poor nutritional status of young children. Currently, over half of children under five show signs of stunting, a measure of chronic under-nutrition (see Chapter 5 for greater detail).

The INSTAT/Cornell report, *Determinants of Poverty* (1998), financed by USAID, measured purchasing power by the quantity of daily staple foods that a Malagasy can purchase from the minimum monthly wage (SMIG). In 1982, a typical Malagasy on the SMIG could buy 3.8 kg of rice per day, while in 1996 he could only buy 2.4 kg, this 1996 rate is the best it has been since 1984. Compared to rice, the cost of maize and cassava fluctuated greatly but Malagasy ability to purchase these foods is greater compared to rice, and stronger in 1996 than it was in 1982.

Approximately 88 percent of the economically active population work in agriculture. Consumption from home production is the predominant mode of rural agriculture, but the production of non-edible cash crops such as cotton, sugar and coffee is increasingly important to rural purchasing power. A large percentage of the population of employable age, especially in urban areas, is unemployed or under-employed.

Incomes in Madagascar are determined essentially by a combination of market performance, land access for agriculture and off-farm income. Given an average household size of more than five members, formal sector wage employment only covers part of a household's needs, and is only one of several household coping mechanisms. In Antananarivo, participation in the informal sector is an important survival strategy. According to the World Bank (1996) in 1990 40

5 United Nations Development Program Human Development Report 1997 (New York: Oxford University Press for the UNDP, 1997)

6 The World Bank Madagascar Poverty Assessment June 28, 1996 p. 12

7 *ibid.* p. 13

8 *ibid.* p. 33

percent of the active urban population in Madagascar was working in the informal sector. World Bank's Food Security and Nutrition Project, SECALINE, reports that an average of 47.9 percent of income is from agricultural revenue, salaries make up 26.4 percent and non-agricultural income and other sources account for 25.7 percent. Across the provinces, the situation is quite varied. Antananarivo has the lowest portion of revenue derived from agriculture at 30.5 percent while Toliara is at 69.8 percent.

## **4.2 Infrastructure and Market Knowledge/Development**

The stagnation of local production coupled with an annual increase of population of 2.8 percent has resulted in a reduction in food available for consumption. The lack of suitable markets, inefficient infrastructure, long distances and other factors have affected marketing of the production. High port charges and inefficient port operations limit availability of food by raising the cost beyond the purchasing power of much of the Malagasy population and restricting access to food in critical seasons. The 50,000 km of passable roads of the 1970s were reduced to a mere 8,600 kms (of which 1,500 km are not passable during the rainy season) in 1996. At least 22 of 111 Malagasy Districts are considered highly isolated and inaccessible often up to six and seven months each year, due to road, bridge and port problems.

Moving food from the surplus areas to the chronically deficit south is still too costly to be practical or widespread, resulting in high purchasing costs in the south, and lower revenue to farmers in the north. Poor roads, inefficient coastal shipping and a high-cost small-scale trading network are additional important elements in the high marketing cost equation. Even though infrastructure improvements are occurring, thanks to the investments of the international donor community, both the government and the private sector, including individual farmers, lack the operational expertise and the foreign exchange to purchase selected food and inputs from outside the country. Given the limited basket of goods manufactured inside Madagascar, this lack of market development directly affects food access.

## **4.3 Food and Economic Policy Issues**

Price controls and other inhibiting government policies, in place until the mid-1980s, partly explain the reduction in rice consumption from 150 kg/person in 1975 to 115 in 1995. At present, it is estimated that only 25 percent of the rice production is marketed, as well as nine percent of sweet potatoes, 16 percent of manioc, 22 percent of potatoes, 35 percent of maize and 40 percent of legumes.

The GOM and the World Bank recognize poverty reduction and agricultural sector reform as integral parts of the Structural Adjustment Program. Significant agricultural reforms were undertaken in the 1980s and economic progress has been marked since 1994. The watershed event was the floating of the Malagasy Franc (Fmg) in 1994. The Franc has drifted and the exchange rate increased from 1,750 Francs to the dollar to approximately 5,200 Francs in late 1997. The inflation rate dropped from 61.2 percent at the end of 1994 to about 37 percent in 1995 and was further reduced to 4.8 percent by the end of 1997. The

improvement in economic management was, in part, due to the management of public finances. USAID has played a significant role in assisting in this process.

Taxes from trade have declined in recent years but are not yet compensated for by increases in tax collection from other sources. The failure of the central government to collect tax receipts (less than eight percent of GDP compared to 18 percent in Africa), and an excessive reliance on foreign trade taxes, continues to impede economic growth. Recent government actions suggest a tightening of government expenditures with priority given to the key sectors of health, agriculture, education, justice, security and basic infrastructure.

Madagascar's external debt is \$4.3 billion of which \$2 billion represents arrears. Paris Club members hold 42 percent of the debt and multilateral institutions hold another 37 percent. A number of significant changes in the past two years have created a climate for economic change. The signature in September 1996 of the Government Policy Framework Paper with the Bretton Woods institutions opened the way for the reestablishment of donor support, including the IMF three-year \$114 million Enhanced Structural Adjustment Facility (ESAF) in November 1996. Large inflows of official development assistance (totaling over U.S. \$298 million in 1995) reflect the need for external assistance and there are indications that the level is increasing. France is the largest donor (30 percent) followed by the World Bank (23 percent), Japan (9 percent), the US and the European Union (both at 8.6 percent). More than half of all foreign assistance goes to three priority areas: infrastructure (transport and communication), social development and agriculture.

#### **4.4 Current USAID Efforts to Improve Food Access**

In the provinces of Fianarantsoa and Mahajunga, the USAID-financed Commercial Agricultural Promotion (CAP) Project focuses on improving access to food through the rehabilitation of roads, the organization of irrigation perimeters, the promotion of agricultural products and environmental protection. The CAP project road rehabilitation component has been successful in opening up isolated rural communities in both regions. For example in Mahajunga, a 50-km stretch which is maintained by the villagers who live along the road to the village of Bekobay was opened and food flows in both directions increased dramatically. Market prices for rice grown by these farmers also went from 400 to 700 FMG/kg, almost doubling their purchasing power derived from the sale of rice. Results from a survey undertaken by IFPRI with FOFIFA indicate that adequate market roads can and do increase farmer revenues. This example is being duplicated over the 400 km of roads that have been rehabilitated by the CAP project. In the Bealanana region (which is very isolated) roads have opened areas that have been almost completely isolated for dozens of years. A critical gain here is in the empowerment of rural communities, since road user associations collect fees to maintain a road and insure that in times of difficulty emergency actions can be carried out. This is especially true in the Manakara area, which is subject to frequent cyclones. CAP efforts are funded only through September 1999, but the maintenance of these roads and their role in supporting market development will be continued under a new mechanism as part of USAID's SO3 landscape development initiatives.

CAP also works closely with the agribusiness sector by providing business management advice and training. Economic growth is heavily dependent on the efficiency of the agribusiness sector. Of the 130 businesses which USAID assists (in two provinces Mahajunga and Fianarantsoa), more than two-thirds have increased revenues, diversified their product lines and been able to increase assets since start-up two years earlier. One northern business operator is building a new fruit and vegetable processing plant that will employ 500 people and buy raw materials from over 3000 farm households.

The Malagasy Institute of Statistics (INSTAT) is collaborating with Cornell University under USAID funding to analyze potential impacts of policy change and to provide policymakers with options that will maximize benefits for the poor. In 1997, the researchers produced a major study, *The Structure and Determinants of Poverty in Madagascar* – a document that provides a rich data source for further study. The INSTAT/Cornell team is planning to investigate substitutability of roots and tubers for rice in the Malagasy diet in the coming year, which will be of great value to USAID's on-going food security monitoring. Also on the INSTAT/Cornell agenda is an inventory of the existing indigenous coping mechanisms communities draw on in response to economic stress and reform.

- The International Food Policy Research Institute (IFPRI) is funded by USAID to research the adjustment of local marketing systems and the farming sector response to liberalization among the Highlands and Mahajanga province. Working in collaboration with the national agricultural research institute FOFIFA they are compiling survey data from 126 input distributors, 114 seed multipliers, over 800 commercial businesses, 200 villages and more than 500 households. Their study provides an opportunity to examine a range of perspectives on food access from the public and private sector.

## 5. FOOD UTILIZATION: NATURE, SCOPE & CURRENT EFFORTS

### 5.1 Consumption

As described above, food availability in Madagascar barely meets aggregate requirements. High levels of poverty and malnutrition suggest that uneven food distribution at the sub-national level prevents a significant portion of the population from meeting daily requirements (estimated at 2,133 calories per person). Actual energy consumption data show that the average Malagasy consumes 2,115 kcal/person/day (Table 4), with variations between 1,771 kcal in Toliara and 2,435 kcal in Antsiranana. Thus, although the Malagasy on average consume approximately 18 kcal less than required each day, the population in some regions experiences calorie deficits which exceed 300 kcal per day.

PROVINCE	Population	Area	Pop. Density	Consumption
	<i>% National Total</i>	<i>% National Total</i>	<i>Inhab/Sq Km</i>	<i>Kcal/Person/Day</i>
Antananarivo	28.8	10	61.3	2181
Antsiranana	7.5	7	21.8	2435
Fianarantsoa	21.9	17	26.5	2327
Mahajunga	11.1	26	9.2	2177
Toamasina	16.1	12	27.7	1820
Toliara	14.6	27	11.3	1771
<b>Total/Average</b>	<b>100</b>	<b>100</b>	<b>21.2</b>	<b>2115</b>

**Table 4 Demographics and Consumption**

Source: Republic of Madagascar Min. Agr., page 29, August 1997

Most of the Malagasy diet (83 percent) is composed of cereals, roots and tubers (Table 5). On the average, 60 percent of the diet is made up of grains, of which the most commonly eaten is rice (84 percent). As noted earlier, data show that rice consumption has declined from 150 kg/person/day in earlier years to 115 in 1995. Only in Toliara, where the climate is dry, is maize consumed in important amounts (37 percent).

The next largest dietary component, roots and tubers, constitutes an average of 24 percent of foods consumed, ranging from eight percent (Mahajunga) to 35 percent (Fianarantsoa) between regions. Although fruits and vegetables make up an average of 10 percent of the diet, regional consumption varies from lows of six percent in Antananarivo and Mahajunga, to 18 percent in Toliara. Animal products are consumed as a proportion of the diet varying from two percent in Fianarantsoa to eight percent in Mahajunga, with a national average of four percent. The relatively low consumption of fruits, vegetables and meat products is likely to result in inadequate intake of vitamins and minerals, such as vitamin A, zinc and iron, and thus is cause for concern.

The FAO estimates that oil and fat consumption is 1.5 kg/person/year, well below the recommended amount of nine kilograms and only one third of the African average of 4.5 kg per year. Inadequate consumption of fats negatively affects the absorption of fat-soluble vitamins, including Vitamin A. Overall, food consumption data indicate that the Malagasy diet is limited in terms of variety and energy—both factors that have serious food security and nutritional implications.

PROVINCE All Person/Day	CEREALS		ROOTS & TUBERS		FRUITS & LEGUMES		ANIMAL PRODUCTS	
	Grams (% Rice / %Maize)	Kcal	Grams	Kcal	Grams	Kcal	Grams	Kcal
Antananarivo	373 (78% / 13%)	1293 (59%)	401	569 (26%)	161	132 (6%)	67	96 (5%)
Antsiranana	524 (73% / 10%)	1822 (75%)	97	159 (7%)	384	239 (10%)	81	109 (5%)
Fianarantsoa	345 (92% / 5%)	1204 (52%)	552	811 (35%)	373	229 (10%)	29	37 (2%)
Mahajunga	469 (86% / 6%)	1629 (75%)	108	165 (8%)	185	124 (6%)	106	176 (8%)
Toamasina	305 (94% / 4%)	1061 (60%)	234	361 (20%)	451	278 (15%)	41	49 (3%)
Toliara	225 (63% / 34%)	791 (45%)	346	556 (31%)	536	312 (18%)	57	57 (3%)
Total/Average	361 (84% / 10%)	1255 (60%)	331	497 (24%)	321	206 (10%)	60	83 (4%)

**Table 5 Consumption Level of Specific Food Groups in 1993 by Province (grams/day AND kcal/day)** Source Adapted from Republic of Madagascar Min Ag , page 31, August 1997

## 5.2 Infant Feeding

While breastfeeding in Madagascar is virtually universal and usually lasts over one year, exclusive breastfeeding does not last long, according to the 1998 DHS. Over 78 percent of infants were exclusively breastfed through the first month, but by three months, only 49 percent of infants were exclusively breastfed. Less than 35 percent of newborns were breastfed within an hour of birth, but 79 percent were breastfed within the first twenty-four hours of life. During the first three days of life, some infants are given liquids other than breast-milk, such as warm water, rice water, coffee, and fruit juice. The introduction of inappropriate complementary liquids and foods in the early months places infants at high risk of diarrhea and other illnesses, and contributes to the early signs of stunting among Malagasy infants.

Most Malagasy children receive complementary foods, in addition to breast-milk, by age six or seven months of age. At 20 months, 54 percent of the infants were still breastfeeding. Breast milk substitutes are rarely used in Madagascar, and very few mothers offer their infants a feeding bottle, so this is not an issue in Madagascar. A separate study of child feeding practices (BASICS, 1996) noted that by one year of age, most children are fed the daily family meal, which typically consists of rice, in addition to breast milk, and some snacks. Based on the energy density of boiled rice or maize porridge, a child 12 months of age would have to eat to her full stomach capacity three to five times a day to satisfy minimum daily energy needs. Inadequate feeding, in terms of frequency, amount and quality, increase a child's risk of becoming undernourished.

The delay in commencing breastfeeding, the early introduction of foods and liquids other than breast-milk, and the inadequacy, in terms of caloric density

and variety, of complementary foods are factors which contribute to the alarming disease and malnutrition patterns found in Madagascar. According to a report by BASICS (1996), adequate knowledge of exclusive breastfeeding and appropriate complementary feeding were found in only 30 percent of mothers, suggesting the need for information dissemination and behavior modification.

### 5.3 Nutritional Status

Nutritional status is strongly influenced by both the quantity and quality of food intake. Malnutrition is usually caused by insufficient nutritional intake, and may be exacerbated by infectious diseases, unfavorable socio-economic and socio-cultural conditions, and even the level of care provided to an individual. In Madagascar, the most prevalent forms of malnutrition are protein-energy malnutrition, vitamin A deficiency, iron-deficiency anemia, and iodine deficiency disorders.

#### 5.3.1 Child and Maternal Nutrition

Chronic malnutrition in children, resulting in stunting or low height-for-age, is an indication of long-term under-nutrition and poor consumption. Approximately half of Malagasy children suffer from chronic malnutrition (48 percent of the 1997 DHS reference group, and 49 percent of the 1995 MICS<sup>9</sup> reference group). About half of these children (22 percent of children under five in 1997, 27 percent in 1995) suffer from severe stunting, with heights-for-age greater than three standard deviations (SD) below the norm.

According to the DHS results, stunting is more prevalent in rural areas (49 percent) than urban areas (45 percent). Male children are slightly more vulnerable (52 percent) than females (45 percent). The 1997 DHS found a mild decrease in Madagascar's high rate of stunting from the 1992 DHS, and identified Antananarivo (57 percent), Fianarantsoa (52 percent) and Toamasina (48 percent) as the provinces most affected by low height-for-age, and Toliara the least (37 percent). The rates of stunting found in Madagascar remain unacceptably high but are not surprising, given the restricted caloric intake, extremely limited consumption of animal products, and generally inadequate complementary feeding practices.

Wasting, or low weight-for-height signifies acute malnutrition. Wasting is a reflection of current, rather than past nutritional intake, and is therefore a useful tool to assess nutrition problems during emergencies. The prevalence of moderate (-2 SD) and severe (-3 SD) wasting in Madagascar, according to the 1997 DHS, was estimated to be 7.4 percent and 0.9 percent, respectively. Wasting was most prevalent in Toamasina (9.3 percent) and in Antananarivo (7.9 percent), with higher levels in rural areas (7.9 percent) than in the urban areas (5.3 percent). The highest prevalence of acute malnutrition was found among infants 12 to 23 months old, with a sharp decline after 24 months of age.

Underweight status, or insufficient weight-for-age, is the result of both chronic and acute malnutrition. Between 1992 and 1997 the percentage of underweight children rose from 39 percent to 40 percent. The rate of underweight children is

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<sup>9</sup> Multiple Indicator Cluster Survey UNICEF 1995

greater in rural areas (41 percent) than in urban zones (36 percent), and there is no difference in the rate of underweight between girls and boys. As with chronic malnutrition, the provinces of Antananarivo (44 percent), Fianarantsoa (44 percent) and Toamasina (40 percent) were the most affected by low weight-for-age. Severe underweight (greater than three standard deviations below the norm) affected 12.8 percent of under-fives.

Maternal nutrition is an important determinant of the health of the child and also affects the ability of the mother to carry out economic and social tasks. Although very little data exist on women's nutrition in Madagascar, the percentage of live birth weights below 2,500 grams is a proxy for maternal nutrition. Based on births in government facilities for 1992, 12 percent of babies born were below 2,500 grams. However, less than half of all births occur in health facilities, and it is estimated that the actual rate of low birth-weight infants is considerably higher.

### 5.3.2 Micronutrient Deficiencies

Poverty and food insecurity are partly responsible for inadequate micronutrient intake in Madagascar. In addition to lack of variety in the Malagasy diet, poor hygiene and sanitation, and scarce water supplies result in high rates of parasitic infestations and gastro-intestinal infections that further reduce the body's capacity to absorb needed micronutrients.

Research has confirmed that micronutrient deficiencies, particularly of vitamin A, iron and iodine, are directly responsible for increased child and maternal morbidity and disease-related mortality. The International Vitamin A Consultative Group (IVACG) statement on Vitamin A Status and Childhood Mortality (1997) concludes that Vitamin A plays an important role in preventing nutritional blindness and in reducing childhood morbidity and mortality, from mid-infancy through the early school-age years, particularly from measles and diarrhea. Recent field trials of Vitamin A supplementation in Asia and Sub-Saharan Africa have demonstrated that eliminating Vitamin A deficiency can reduce mortality in children under age five by 23 to 34 percent. Surveys in Nepal indicate that Vitamin A sufficiency has a similar effect on maternal health and survival.

Iron deficiency anemia (IDA) and Iodine Deficiency Disorders (IDD) have particularly adverse effects on pregnant women and pre-school children, because of their increased growth and development needs. If not corrected, both IDA and IDD can lead to impaired development of mental and physical coordination skills. Iodine deficiency is found in Madagascar's high plateau regions and in other inland areas with Toliara, Fianarantsoa and Toamasina being the most affected provinces. While highland areas usually have some access to coastal zones, the extremely low purchasing power of the Malagasy prohibits the majority of the inland population from consuming iodine rich foods such as shrimp and shellfish. An estimated nine million people are at risk of IDD, of whom three million are severely deficient. In 1994, the rate of goiter in Madagascar was 45 percent. An iodized oil capsule distribution program was initiated in 1993, followed by iodized salt production in 1995. By 1997, over 80 percent of the salt produced locally was iodized, and the rate of goiter among school age children had fallen to 15 percent. USAID supported an evaluation of the National IDD program (March 1998), to guide development of a national strategy for the elimination of IDD and sustainability of iodized salt efforts.

Although high rates of malnutrition among under-fives indicate that Vitamin A deficiency and iron-deficiency anemia are both widespread, few epidemiological data exist on either micronutrient problem. A study<sup>10</sup> of children age six to 71 months conducted in 1994 in Ankazobe indicated that Vitamin A deficiency is significant, with nearly 50 percent of the reference group suffering from deficient serum retinol levels. In 1996, a BASICS study confirmed widespread Vitamin deficiency. Among 1,440 mothers of 1 to 23 month old children living in Antsirabe II and Fianarantsoa II Districts, eight percent reported difficulty seeing at dusk. Night blindness and serum retinol data from a recent Ministry of Health Vitamin A survey in two provinces also concluded that Vitamin A deficiency is severe in Madagascar. USAID will support a nationwide survey in 1998, to draw attention to the seriousness of the problem and its effects on child survival, and to inform approaches to eliminate Vitamin A deficiency.

Information on iron deficiency anemia is currently even more sparse than that on vitamin A deficiency. However, the 1997 DHS introduced the collection of hemoglobin measures for both mothers and their children between six and 36 months. According to this survey, 12% of women and 57% of children tested had moderate to severe anemia. A broad strategy to combat anemia has been developed by the Nutrition Service of the Ministry of Health, including systematic iron-folate supplementation of pregnant women, food fortification and the promotion of iron rich foods. A USAID-funded food fortification assessment team will visit Madagascar in 1998, to identify potential food vehicles for vitamin A and iron fortification, and provide guidelines for the fortification of local foods such as margarine, oil, flour and sugar.

#### **5.4 Morbidity**

The health status of a population is closely connected to its nutritional status. The challenge is to reduce high rates of infectious disease by improving health services and by increasing general health knowledge and appropriate practices. Mortality rates in Madagascar indicate high levels of disease. Ministry of Health morbidity data show that infectious diseases such as respiratory infections, measles, malaria and diarrhea diseases are major killers. In addition, sexually transmitted diseases are very prevalent and HIV/AIDS has a potential to be a major problem. Adding to the morbidity burden of women are high rates of unwanted fertility and average total fertility. While this pattern is typical of many developing countries, the scale of the problem and the current lack of access to services suggest that improved health services should be a vital component of the food security strategy.

#### **5.5 Mortality Infant, Child and Maternal**

Under-five and infant mortality rates in Madagascar are among the highest in the world. In 1998, the GOM and the United Nations estimate that of 1,000 live births, about 94 infants will die before their first birthday. This is approximately 10 times greater than in developed countries and double that of most African countries. By age five, more than 164 children of the initial 1,000 live newborns have died. The death of almost one in five children by the age of five accounts

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<sup>10</sup> National Center for Environmental Research, Ministry of Scientific Research

for the short life expectancy of 54 years for males and 58 years for females. The 1997 DHS survey indicates that rural areas have significantly more infant and under-five mortality than urban areas, and that women without education or with some primary school have much higher risks of losing a child than their better-educated peers. Children of young mothers (less than 20 years of age) and those small at birth are at much greater risk of early death. Risk of death seems not to be linked to the sex of the child.

The 1997 DHS reports a rate of 488 to 507 maternal deaths per 100,000 births. This has decreased compared to the 1992 rate (529 to 596) but remains an extremely high rate even among African countries. As most births occur outside the official reporting system, especially in rural areas, the rate is likely to be closer to the higher figure. The frightening percentage of deaths due to illegal, botched abortions contributes to this high rate. The tragedy of a maternal death has profound implications regardless of circumstances. USAID's support to expand access to family planning services is in direct response to this problem.

## **5.6 Health Services and Coverage**

The national health system is a mosaic of services characterized by poor quality and limited outreach. The combination of lack of resources (equipment, essential drugs, staff and support), degradation of infrastructure, a concentration in urban areas, and dispersion of the population has meant that access to services is poor and utilization of available services is weak. An estimated 65 percent of the population has access to basic services, among these, 30 to 70 percent actually use the services. Insufficient access to family planning and STD/HIV services places additional health burdens on women. This lack of basic curative and preventive services directly affects household food security by reducing time available for productive activities (especially for women) and by reducing the ability of individuals to consume food and to utilize/retain nutrients. Appropriate health care for children and women is an important factor in the level of nutrients available to the child and the retention of those nutrients. Vaccination coverage of women and children is also low. In a 1996 study in two districts (Setzer et al., 1997), only 52 percent of children under 12 months had been vaccinated against measles. The 1997 DHS reported that 36 percent of children under two years had received all necessary vaccinations.

## **5.7 Current USAID Efforts in Improving Food Utilization**

USAID/Madagascar's SO2 addresses the health needs of the Malagasy family, especially the family planning, child survival and HIV/AIDS prevention needs of women, infants and children. SO2 contributes to a healthier population and smaller average family size, and at the same time contributes to food security by improving utilization of food. The USAID program intervenes at many levels, but the important interventions for utilization are focused at three levels: the family, the community and the health center. Interventions at these levels are designed to increase the quality and availability of key health services, improve community awareness and involvement in health activities, and improve health-related behaviors of individuals and families.

SO2 has also designed and received approval for Title II food aid monetization proposals targeted to the urban poor in Antananarivo and to neglected populations of Fianarantsoa and Tamatave, two of Madagascar's most food insecure regions. Three international PVOs operating in Madagascar (CRS, CARE, and ADRA) will be implementing monetization programs, the proceeds of which will be used for community-based exercises to improve local food security by focussing on utilization and also, to varying degrees, availability and access.

Over the past six years, Catholic Relief Services (CRS) used Title II commodities for school feeding (now ending) and child survival activities. The current *Food Assisted Child Survival* (FACS) activities empower communities to manage their own food programs, in 1997, the number of such communities doubled to almost 150. CRS has received a child survival grant from USAID to support its transition from a center-based child weighing and food distribution program to this community-based FACS activity, targeted to under-twos. These efforts are integrated with P L 480 commodity distribution and the program is available in every province of the country (coverage depends on diocesan support). The monetization program will be used to reinforce communities' ability to better nourish their children through increased income generation as well as utilization improvements.

CARE has received a grant from USAID to support improved health services and outreach in a poor urban slum in Antananarivo, including extensive Behavior Change Communication efforts. CARE's monetization program will strengthen these efforts by linking access-related income generation to health promotion activities.

ADRA has received support from USAID both from a child survival sub-grant and through its new monetization program. ADRA focuses its efforts to improve nutrition and child survival through BCC and improvements in health services in the Tamatave area in the eastern coast. The monetization program will test approaches to increase availability of food as well as improve use of health services and healthy behaviors.

SO2 supports multiple partners to improve Behavior Change Communication (BCC). The objective of BCC is the adoption of improved practices, including improved infant feeding, maternal nutrition, better diarrheal treatment, increased use of immunization services, and improved caretaker ability to respond appropriately to the signs of childhood illness. SO2 is working closely with the MOH and these partners to develop a standard package of nutrition and child survival BCC messages for use nation-wide. Community-level awareness and participation enhances the ability of parents and caretakers to improve child nutrition. Community health workers are trained to provide education and counseling related to maternal and infant health and nutrition and to refer clients to health centers for clinical services. Interventions of key partners are described briefly below.

BASICS has developed innovative BCC activities and training of clinicians, focused on two districts but reaching a broad group of child survival partners. The BCC strategies, messages and materials developed by BASICS for community actions are being used by a wide variety of child survival partners. BASICS support for Integrated Management of Childhood Illness (IMCI), a WHO-endorsed approach, promotes competent and comprehensive screening of child illness through training of clinicians in health centers.

UNICEF has received a USAID grant to increase the number of immunization sites with refrigerators, to improve national immunization program coverage. USAID and UNICEF have also combined financial and staff resources to test and promote a “minimum package” of six nutrition messages on breastfeeding, complementary feeding and micronutrients, and test interventions at the health center level such as the Baby Friendly Hospital Initiative and improved counseling during well-baby consultations.

Peace Corps has a PASA<sup>11</sup> from USAID to support PCVs working in health education in different villages across Madagascar, focused in the two USAID priority regions with the worst levels of child malnutrition, Fianarantsoa and Antananarivo. These PCVs conduct extensive community-level surveys of current health practices including nutritional practices, which inform message and materials development for BCC. They then use the BCC materials and devise other strategies to improve health and nutritional status in their villages.

OMNI/Linkages provides technical assistance to all child survival partners listed above to improve and standardize nutrition approaches, messages and materials, and to strengthen the use of the minimum nutritional package.

Medical Care Development International (MCDI) has received a USAID Child Survival grant from the Bureau for Humanitarian Response (BHR) that supports a range of child survival and nutrition promotion activities in a district in the south. MCDI collaborates with other USAID partners in development and use of BCC messages to improve nutritional status.

Phase II Technical Assistance to the SO2 program, beginning in late 1998, will combine the different interventions of SO2 for health and family planning, including a specific focus on BCC. It will be the key vehicle for USAID to provide technical support to all child survival partners to achieve key results for smaller healthier families, as well as to improve food utilization by improving health services and nutrition behaviors.

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<sup>11</sup> A PASA is a Participating Agency Service Agreement between two or more US agencies.

## 6. NATURAL DISASTERS : NATURE, SCOPE & USAID EFFORTS

Madagascar regularly experiences natural calamities with the result that individual household food security is seriously compromised. Food Security is inseparable from Disaster Management in Madagascar. There are few districts in Madagascar that are not considered vulnerable to one or more natural disasters (see Map series). The south of Madagascar is traditionally more vulnerable to locust invasions and it has more extensive drought-prone areas than does the north and center of the country. The east and central Highlands experience seasonal flooding and much of the island's coast (especially the northeast and southeast) is hit regularly by cyclones. The likelihood that Madagascar will face at least one of these unrelated disasters with potentially catastrophic effects on food security each year is great. Each of the three are discussed in greater detail below.

### 6.1 Drought

Every four to seven years, El Niño haunts the region, leaving the population of Madagascar, USAID and other donors guessing about how little rain might fall, especially in the 22 districts considered most drought vulnerable. Rain deficits in the south are often accompanied by excessive precipitation on the plateau triggering flooding and water-borne disease outbreaks. The two most severe droughts in Madagascar's recent history were in 1982/83 and 1991/92.

Of the nation's 111 districts, the most drought-vulnerable have been identified using satellite imagery. In addition to the southernmost part of the country, eight central districts and one northern district regularly suffer drought and have to date received less donor assistance and attention than those in the south. Only Toamasina Province is free of such drought-vulnerable districts, but it suffers cyclone strikes more frequently than the other provinces. The 22 drought-vulnerable districts (see Map 3) account for 15 percent of the nation's population and 14 percent and 16 percent of typical annual rice and maize harvests, respectively.

### 6.2 Locusts

Every year locusts flare up in the south of Madagascar between the Mahafaly Plains and the southeastern Anosyennes Mountain Chain (see Map). Consuming daily their weight (approximately one-gram) and flying in swarms which average 50 million per square kilometer, the potential destruction of annual agricultural production is immense. Typically there are two species of locust which plague Madagascar: *locusta migratoria capito* (the most important agricultural pest in Madagascar attacking rice and sugar cane) and *nomadacris septemfasciata* (grazes predominantly on maize). Carefully planned and implemented control programs, estimated to cost \$100,000 each year, are essential to keep the locust population to an absolute minimum and prevent development of gregarious swarms. Documents attesting to local locust invasions date back to 1617 and the record invasion of 1945 destroyed 20,000

tons of rice on the Morovoay Plains of Mahajunga province (part of Madagascar's breadbasket) Locusts have expanded beyond this annual control area repeatedly over the past 20 years, reaching Antananarivo province in 1977, 1984 and again in 1998

In response to the serious outbreak in 1992/93, USAID granted the Malagasy Department of Crop Protection (DPV) \$2.5 million to research biological control products, to procure pesticides, and to help operate air strikes. Under the biological component, Montana State University identified six indigenous fungal strains of pathogens appropriate for locust treatment—a feat that prompted USAID, at the GOM's request, to extend the funding to continue the research through May 1995 under the Africa Emergency Locust and Grasshopper Assistance (AELGA) program. Montana State returned in early 1998 to field-test their biological pathogens. The most recent outbreak, first flagged in April 1996, recently reached serious proportions with an estimated seven million hectares infested. In 1997 approximately \$5 million was pledged by donors and given to FAO for management of the control program. As the present campaign has now been deemed merely palliative and the country braces itself for a three to six year effort, an additional \$12.5 million has been requested by the GOM for operations, more than half of this has already been pledged by the European Union.

### 6.3 Cyclones / Floods

Every year one or more cyclones strike Madagascar causing widely varying degrees of destruction and fatality. On the average, there are five annual cyclones of which three attain speeds of 75 km/h and one attains 120 km/h. Every three years one of those cyclones reaches 225 km/h. Early in 1997, it was anticipated that nine to 10 would develop in the southwestern Indian Ocean basin and three to four were likely to hit Madagascar in some shape or size before the end of the season. Instead, the El Niño phenomenon prevailed and, as is typical of the four most recent El Niño years, held back all cyclone impact on Madagascar. The cyclone season starts December 15<sup>th</sup> and runs through April 15<sup>th</sup> each year, which coincides roughly with the Hungry Period (or the *Period de Soudure*, between two agricultural harvests). Hungry period crops vulnerable to cyclone destruction include bananas and other fruits, manioc, and cash crops such as coffee, litchi (fruit) and mushrooms. Deforestation has contributed to the ever-increasing impact of cyclones.

Over 30 cyclones and five major related flood events have ravaged Madagascar since 1972 and together have incurred significant relief costs. The eastern central, western central and southeastern areas have higher chances of suffering cyclones. Cyclone Gretelle hit the eastern side of Madagascar in January of 1997 at Farafangana, a district not identified as typically cyclone-vulnerable. Gretelle destruction (227 deaths, 97 disappearances, 187 injured, and tens of thousands of homeless) rallied US Government efforts which concentrated in technical assistance, Food / Cash for Work projects, water purification, nutrition rehabilitation and building and road construction.

## 6.4 Current USAID Efforts in Preparedness, Mitigation, Prevention & Planning (PMPP)

Since 1996, significant progress has been made in Disaster PMPP. In the fall of 1996, USAID was instrumental in the creation of an inter-agency Disaster Response Steering Committee named CRIC. CRIC is composed of donor and other disaster-active representatives, under the National Disaster Management Unit (CNS) of the Ministry of the Interior. As a follow-on, USAID sponsored a Disaster Preparedness Assessment Mission in August of 1996, with technical assistance from OFDA. In mid-1997, USAID / Madagascar revised its Disaster Relief Plan following a February 1997 OFDA Mission to Madagascar which stated that priority should be given to floods and cyclones. Upon the creation of its Food Security and Disaster Unit in October 1997, USAID/Madagascar became a catalyst for the revival of a US Watch Group meeting on a per-need basis to discuss progress and appropriate actions related to the onset of natural disaster. USAID has the comparative advantage of being equipped to contribute to PMPP in three ways: 1) the monitoring and state of the art<sup>12</sup> dissemination of relevant data and anecdotal information, 2) the provision, management and appropriate targeting of Title II commodities / funds, and 3) the strengthening of CNS/CRIC in managing a multitude of donors and disasters.

As a result of the OFDA February 1997 mission to Madagascar, it was recommended that USAID/Madagascar implement disaster management / mitigation training to build national, regional, and local capacities -- especially in cyclone management -- using OFDA training advisors and materials. The OFDA August 1996 Report made important recommendations to improve USAID's performance in responding to disaster, the majority of which had already been implemented prior to a second OFDA second visit six months later.

The international PVO, CARE, established a field office in Madagascar in 1992 and currently has a staff of four expatriates and 125 national staff. CARE's disaster response capacity is considerable and large relief funds have been channeled through it from both US and other donors. As part of its routine operations and new monetization program, CARE is promoting disaster preparedness along the cyclone-vulnerable eastern coast of the country. The PMPP component of CARE's monetization proposal is an important pilot effort by the Mission and its partners to increase the efficiency of preparation for and response to regular onset emergencies.

In 1994, Catholic Relief Services (CRS), in addition to a host of other developmental activities, became active in Disaster PMPP, when it was willing to divert commodities from its regular Title II program to CARE and Caritas to provide immediate relief to cyclone victims. With increased pressure from USAID to demonstrate measurable impact in development programs, CRS requested an operational reserve of 300MT of Corn Soy blend (CSB) which it stores in Antananarivo and Toamasina warehouses. CRS has a large representation governed by 13 dioceses throughout the country, making rapid and widespread emergency operations feasible.

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<sup>12</sup> This includes a locally produced Food Security Web site named SA KAFO that is undergoing pre-testing. It will be published and maintained as a joint effort of EU, WFP and USAID.

Church World Service (CWS) Through a national NGO, Fikrifama, and in close alliance with the National Council of Christian Churches of Madagascar (NCCM/FFKM) CWS has had a presence in the country since a 1975 irrigation program was implemented, and more recently provided financial assistance to mitigate cyclone destruction. In 1998, CWS requested but was not awarded USAID Matching Grant funds for a heightened disaster PMPP component in Madagascar



## 7. USAID MADAGASCAR FOOD SECURITY STRATEGY

### 7.1 Basis and Assumptions

The Mission's Food Security Strategy is based on the conclusion that while aggregate food availability should be sufficient for the current population, there are four segments of the population more vulnerable than others to either chronic or acute food insecurity, whether from problems of food availability, food access, food utilization or any combination of these factors. These four groups are (1) the urban poor, (2) children under five, (3) pregnant and lactating women, and (4) populations in disaster-prone, isolated regions.

- Chapter 3 demonstrates that **Madagascar is not chronically food insecure in terms of aggregate food availability** although there are substantial variations among geographic locations and demographic cohorts.
- Chapter 4 demonstrates that because of widespread poverty much of the Malagasy population is chronically food insecure in terms of food access. The estimated 1997 per capita GDP was \$230 and about 70 percent of the population are categorized as absolutely poor. Although a higher percentage of the rural population is categorized as absolutely poor than in urban areas<sup>13</sup> **the urban poor are considered highly food insecure because home-grown food is not available to them and they lack purchasing power to acquire food in sufficient quantities**.
- Chapter 5 demonstrates that food utilization is a chronic problem for a substantial proportion of the Malagasy population. **Particular dietary deficiencies are common among children under five years of age and pregnant and lactating women**, contributing to high levels of low birth weight, stunting and maternal mortality.
- Chapter 6 demonstrates that **rural populations in exposed or isolated regions also suffer recurrent, short-term food insecurity** through impaired availability and access due to cyclones, floods, locusts, and drought.

Following from these conclusions, USAID/Madagascar has made a number of assumptions and decisions regarding its food security strategy. Two sets of general assumptions establish the broader context.

**General Assumption #1** Madagascar's Structural Adjustment Program (SAP) will continue to make gradual, although uneven, progress. The GDP growth rate will consistently surpass the population growth rate. International financial institutions including the IMF and World Bank will continue to support the SAP process.

**General Assumption #2** The level of Development Assistance (DA) funding available to USAID programs in Madagascar is not likely to increase in the FY 1998 - 2002 period. USAID/Madagascar staffing will also remain steady.

Within this broader context, the Mission has made a number of more strategic assumptions and decisions to address the needs of identified vulnerable populations, based on the above conclusions and related information.

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<sup>13</sup> *ibid* p 13

**Assumption #1** USAID, other donors, and the GOM will continue to promote sustainable agriculture research, extension and training to assure that aggregate food availability remains sufficient in the future

**Decision #1** Given needs and opportunities as identified in the analysis and scarce DA resources USAID will not target significant additional DA resources to food availability beyond those devoted to its on going interventions under SO3 However it will continue to use Title II resources to increase food availability both through targeted food production activities supported by Title II monetization and through provision of Title II commodities to vulnerable children under five and pregnant and lactating women

**Assumption #2** In terms of access, even the most favorable growth scenarios demonstrate that Madagascar's extreme level of poverty cannot be brought to below 50 percent in the next decade Worldwide experience dictates that short-term job or income generation activities can relieve some of the pressures in the short- and medium-term among highly vulnerable groups, while more generalized poverty can only be alleviated through long-term, systemic reforms

**Decision #2** USAID will therefore continue to hold 'its place at the table" with regard to macroeconomic and legal regulatory and judicial reform to support the long-term reform efforts USAID will continue to allocate DA resources to support economic and policy analyses to assure benefits to the poor are maximized during the reform process

USAID will also allocate resources from Title II monetization to undertake short- and medium term job creation and income generation activities among the urban poor and the other highly vulnerable groups in rural areas

**Assumption #3** In terms of utilization, the deficiencies are multi-dimensional and relate to both quality and quantity of food intake, and do not lend themselves to a quick fix

**Decision #3** Utilization issues directly influence achievement of USAID's SO2 'smaller healthier families' so allocation of significant DA resources is merited To complement SO2's DA-funded efforts to improve food utilization among children under five and pregnant and lactating women USAID will also focus its Title II program toward the most vulnerable groups including poor urban areas and disaster prone communities to achieve measurable results within these groups

**Assumption #4** Madagascar's recurrent disasters have an impact on the Mission's ability to achieve all of its SOs and its long-term goal of poverty reduction. In addition to the human and economic toll to the Malagasy population, responding to these frequent events places a high management burden on our Limited Mission resources.

**Decision #4** USAID will allocate adequate DA resources to its Food Security and Disaster Unit, and will engage in PMPP activities at the national level. It will additionally allocate Title II monetization resources to PVO cooperating sponsors to help foster community awareness and preparedness, particularly in cyclone and flood prone areas.

These conclusions, assumptions, and decisions dictate a two-pronged approach to improving Madagascar's food security. The first element must necessarily be broad-based and address the longer-term and more complex issues of sustainable agriculture, widespread poverty, and inadequate food utilization if gains are to be sustained over time. The second element, however, can and should target the most vulnerable groups in the short- and medium-term, to meet needs while the longer-term strategy is achieved. USAID's approach to each of these two principal elements of its food security strategy is described in the following pages.

## 7.2 Enhancing Food Security as Corollary to Poverty Reduction

Chapter 2 discusses the overall USAID Madagascar strategy to achieve its goal of reduced poverty. It includes a matrix (Figure 1) that shows that the three USAID Madagascar objectives each currently contribute to one or more key determinants of food security as part of their overall strategic management plan. The specific sections of Chapters 3 to 6 devoted to "U.S. Funded Efforts" describe in more detail the efforts summarized in the matrix. The progressive achievement of these strategic and special objectives will contribute significantly to reducing poverty, and thus improving food security, in the long-term.

The first element of USAID's food security is thus based on a simple maxim: people cannot become more food secure without also becoming less poor. **USAID Madagascar's overall strategic plan to reduce poverty is thus fundamental to its food security strategy.**

Figure 1 is reproduced herein to illustrate the long-term strategy.

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	AVAILABILITY	ACCESS	UTILIZATION	DISASTERS
SPO	Economic analysis of the determinants of agricultural productivity and rural household welfare	Economic analysis to inform policy decision-making in support of poverty alleviation TA other support to National Savings Bank to improve purchasing power		Communications Leland Initiative to foster PMPP
SO2	Targeted PL 480 Title II assisted monetization activities increased soil fertility, reduced erosion and burning	Targeted PL 480 Title II assisted monetization activities income generation and improved market knowledge	Nutrition Behavior Change Activities PL 480 Title II Food Assisted Child Survival (FACS) activity Immunization and other CS and population activities	PL 480 Title II assisted monetization activities PMPP in disaster prone communities
SO3	Rice research and increased productivity Intensification of high-value crop production and processing Grants to community groups for soil and water conservation Support to University of Agriculture	Farm-to market road rehabilitation and maintenance Agri business Management Training		Organic pesticide development and dissemination (locust mitigation)

Figure 1 (repeated) Summary of Current USAID Madagascar Activities to Enhance Food Security

### 7.3 Targeted Food Security Strategy

The analyses summarized earlier identify four specific populations that are highly vulnerable to food insecurity. Experience in Madagascar and elsewhere has yielded a number of interventions that can mitigate such vulnerability in the short- and medium-term, while the results of more long-term poverty reduction measures are being achieved. Given the availability of Title II resources to complement DA resources for such purposes, and given the presence in Madagascar of competent Title II Cooperating Sponsors, **USAID has developed a more specific set of activities to address the needs of the four highly vulnerable groups, which forms its "targeted" food security strategy.** All interventions proposed by Cooperating Sponsors must address one or more elements of this targeted strategy. The targeted strategy is summarized in Figure 2.

	Children under 5	Pregnant & Lactating Women	Urban Poor	Disaster Vulnerable
<b>A</b>	<ul style="list-style-type: none"> <li>Title II commodities distributed through Food Assisted Child Survival (FACS) program and targeted Food Production activities in 13 dioceses nationwide</li> </ul>	<ul style="list-style-type: none"> <li>Title II commodities provided to children and their mothers where indicated (CRS/FACS)</li> </ul>	<ul style="list-style-type: none"> <li>Urban food production activities in vulnerable communities in Antananarivo (CARE CRS) Tomasina (ADRA) and 13 urban dioceses nationwide (CRS)</li> </ul>	<ul style="list-style-type: none"> <li>Organic pesticide research development dissemination to mitigate locust threat (SO2)</li> </ul>
<b>V</b>				
<b>A</b>	<ul style="list-style-type: none"> <li>Title II commodities distributed through FACS in urban Antananarivo and 13 dioceses nationwide (FACS)</li> </ul>	<ul style="list-style-type: none"> <li>Womens income generating activities to improve womens purchasing power (CRS CARE ADRA)</li> </ul>	<ul style="list-style-type: none"> <li>Policy analyses dialogue to promote reforms that stimulate private investment to create jobs (SPO)</li> <li>Direct jobs programs to generate income and provide sewerage and sanitation infrastructure in urban Antananarivo (CARE)</li> <li>FACS and direct income generation activities in urban Antananarivo and 13 dioceses nationwide (CRS)</li> </ul>	<ul style="list-style-type: none"> <li>Community organization training in PMPP for disaster prone communities (CARE CWS)</li> </ul>
<b>C</b>				
<b>E</b>				
<b>S</b>				
<b>S</b>				
<b>U</b>	<ul style="list-style-type: none"> <li>TA to MOH and partners in nutrition interventions (OMNI/LINKAGES)</li> <li>TA training support to MOH nationally in child survival (CS) policy and interventions</li> <li>Focused TA training to MOH and NGO partners in Antananarivo and Fianarantsoa in CS knowledge and skills</li> <li>Focused TA training community organization for CS in Tomasina (ADRA) urban Antananarivo (CARE) 13 cities nationwide (CRS) Betoky (MDCI)</li> </ul>	<ul style="list-style-type: none"> <li>TA to MOH and partners in nutrition interventions (OMNI/LINKAGES)</li> <li>TA training support to MOH nationally in maternal health policy and interventions</li> <li>Focused TA training to MOH and NGO partners in Antananarivo and Fianarantsoa in maternal health knowledge and skills</li> <li>Focused TA training community organization for maternal health in Tomasina (ADRA) urban Antananarivo (CARE) 13 cities nationwide (CRS) Betoky (MDCI)</li> </ul>	<ul style="list-style-type: none"> <li>Several PVO partners CS and maternal health programs focussed in Antananarivo (CARE CRS) other cities (CRS ADRA MDCI)</li> </ul>	
<b>T</b>				
<b>I</b>				
<b>L</b>				
<b>I</b>				
<b>Z</b>				
<b>A</b>				
<b>T</b>				
<b>I</b>				
<b>O</b>				
<b>N</b>				
<b>P</b>			<ul style="list-style-type: none"> <li>PMPP organization and training in urban areas prone to disasters (CRS CARE CWS)</li> </ul>	<ul style="list-style-type: none"> <li>PMPP organization and training among vulnerable communities on eastern coast (CARE ADRA) and Antananarivo (CRS CWS)</li> <li>National Internet access established and strengthened for improved communications</li> <li>National monitoring policy dialogue donor coordination with CRIC</li> </ul>
<b>M</b>				
<b>P</b>				
<b>P</b>				

Figure 2 USAID Madagascar Socio-Economically Targeted Food Security Strategy

## 7.4 Measuring Impact

As presented in its FY 2000 Results Review and Resource Request (R4), USAID plans to monitor progress toward achieving its goal of reduced poverty with two indicators i) a decrease in the percent of the population considered absolutely poor, to below 70 percent by 2002<sup>14</sup>, and ii) an increase in the percent of children who show no sign of stunting, to above 49 percent by 2002<sup>15</sup>. These are shown in Tables 6 and 7 at the end of this section, taken from the R4.

The Mission selected these indicators because they are key measures of both poverty and food security, which are intrinsically linked. These indicators will help USAID/Madagascar report on both the CSP and the long-term food security strategy. One factor in their selection was the recommendation of Madagascar's CSP review that the Mission address the issue of Food Security in collaboration with Title II PVO cooperating sponsors, and consider Food Security as a cross-cutting theme with indicators at the goal level. These indicators respond to that recommendation.

The Mission also added two food security indicators to its annual R4 reporting, at the intermediate result level of SO2. These are shown in Tables 8 and 9 following the Goal tables. As stated in the R4, by Year 2000, new nutrition and micronutrient interventions are expected to result in changes in child feeding practices in SO2 partner areas, particularly those of the Title II cooperating sponsors and child survival grantees working among targeted groups. In 1998, analysis of the 1997 DHS will establish baselines and targets for child anemia and exclusive breastfeeding for the rest of the CSP period. The SO2 team believes these will serve as useful proxies of our success with the "targeted" food security strategy, and it will monitor results annually through a multi-indicator mini-survey (MIMS) in a sample of project sites. The 2002 DHS, and other surveys conducted by partners, will provide additional information at national and regional levels.

The SO2 team will additionally work with its partners as the Title II monetization activities get underway to determine if they can and should contribute to USAID reporting on other indicators, such as adoption of sustainable agricultural practices under SO3. At a minimum, the Mission will assure that each SO team is considering its contribution to food security as part of its qualitative and narrative analysis in the R4. Finally, the Mission will also encourage its PVO partners to include specific performance measures related to food security in their annual reports under various grant and other assistance agreements. The SO2 team is working closely with all partners to assure that cost-effective measurements are undertaken on a timely basis, and will continue these efforts as monetization programs get underway.

Monitoring performance under the crosscutting activities of the Food Security Strategy will be sensitive to gender differences and especially to the important role of women in helping to ensure adequate nutrition during early childhood. Gender-disaggregated data can be compiled and examined for the two goal indicators, especially in documenting both the differences in poverty levels of female and male-headed households and the nutritional status of female versus

<sup>14</sup> *The World Bank Madagascar Poverty Assessment June 28 1996 p 12*

<sup>15</sup> *Only 49 percent of children were not stunted according to the 1992 Demographic and Health Survey or DHS. Data from the 1997 DHS portray a slight improvement in stunting at the national level (52%) not stunted.*

male children. The SO2/SO3 Intermediate Result indicators under child survival and sustainable agriculture initiatives rely on gender-disaggregated reporting by the respective partners. Gender-sensitive performance monitoring will ensure that quantitative and qualitative impact measures derived from partner activities form an important part of the annual reporting mechanisms and the management of results under all food security initiatives.



**Table 6 PROPOSED GOAL LEVEL INDICATOR IN R4 2000**

<b>OBJECTIVE</b> Goal Level Reduced Poverty		
<b>APPROVED</b> Proposed New Indicator <b>COUNTRY/ORGANIZATION</b> USAID/Madagascar		
<b>RESULT NAME</b> Goal Level Reduced Poverty		
<b>INDICATOR</b> Proportion of people below the poverty line		
<b>UNIT OF MEASURE</b> Percent of population below the poverty line	<b>YEAR</b>	<b>ACTUAL</b>
<b>SOURCE</b> Baseline World Bank Poverty Assessment 1995 National Statistics Agency (INSTAT)	1993/94 b	70 %
<b>INDICATOR DESCRIPTION</b> The poverty indicator, also called the 'incidence of poverty', is the ratio of the number of poor individuals to the total number of individuals in the population. Poor individuals are those whose consumption expenditures fall below the calculated poverty line. The poverty line used here was calculated based on the expenditures required to purchase a nutritionally adequate food basket and a typical amount of non-food consumption (with typical based on households who actually meet the reference level of food spending)	1997/98	
	1999/2000	
	2001/2002	
<b>COMMENTS</b> With World Bank support the National Statistics Agency (INSTAT) plans to conduct a biannual household survey using the 1993/94 household survey as a baseline. A new household survey was conducted in 1997. The data will be compiled and analyzed with results published in late 1998. Another survey is planned for 1999.		

**Table 7 PROPOSED GOAL LEVEL INDICATOR IN R4 2000**

<b>OBJECTIVE</b> Goal Level Reduced Poverty		
<b>APPROVED</b> Proposed New Indicator		
<b>COUNTRY/ORGANIZATION</b> USAID/Madagascar		
<b>RESULT NAME</b> Goal Level Reduced Poverty		
<b>INDICATOR</b> Children under 5 years of age who show no signs of stunting		
<b>UNIT OF MEASURE</b> Percent of children under 5 years of age who are not stunted	<b>YEAR</b>	<b>ACTUAL</b>
<b>SOURCE</b> 1992 and 1997 Demographic and Health Surveys	1992b	49%
	1997/98	52%
	1999/2000	
	2001/2002	
<b>INDICATOR DESCRIPTION</b> Percent of children under 5 whose height for weight is not less than 2 standard deviations from the median of the International Reference Population (NCHS/CDC/WHO)		
<b>COMMENTS</b> The 49% figure is from the 1992 DHS. National level data will be measured again in the 2002 DHS and possibly in other surveys in the interim. This measure will be used to monitor progress in overall poverty reduction and food security status but targets are not set at this level.		

## PROPOSED INTERMEDIATE RESULT-LEVEL INDICATORS IN R4 2000

**Table 8 PROPOSED**

<b>OBJECTIVE</b> SO2 Smaller Healthier Families			
<b>APPROVED</b> Proposed New Indicator			
<b>COUNTRY/ORGANIZATION</b> USAID/Madagascar			
<b>RESULT NAME</b> IR2 1 Family level – Increased Use of Services and Healthy Behaviors			
<b>INDICATOR</b> Percent of children with adequate hemoglobin levels			
<b>UNIT OF MEASURE</b> Percent of children 6 to 35 months not suffering from anemia	<b>YEAR</b>	<b>PLANNED</b>	<b>ACTUAL</b>
	1997b		43%
<b>SOURCE</b> 1997 Demographic and Health Survey and other surveys	1998	TBD	
<b>INDICATOR DESCRIPTION</b> Percent of children 6 to 35 months who had a hemoglobin test not found to suffer from any form of anemia	1999	TBD	
<b>COMMENTS</b> Indicator will be tracked annually through surveys in project areas	2000	TBD	
	2001	TBD	
	2002	TBD	

**Table 9 PROPOSED**

<b>OBJECTIVE</b> SO2 Smaller Healthier Families			
<b>APPROVED</b> Proposed New Indicator			
<b>COUNTRY/ORGANIZATION</b> USAID/Madagascar			
<b>RESULT NAME</b> IR2 1 Family level – Increased Use of Services and Healthy Behaviors			
<b>INDICATOR</b> Percent of exclusively breastfed infants			
<b>UNIT OF MEASURE</b> Percent of children aged under 4 months exclusively breastfed	<b>YEAR</b>	<b>PLANNED</b>	<b>ACTUAL</b>
	1992b		42%
<b>SOURCE</b> 1992 and 1997 Demographic and Health Surveys and other surveys	1997	50%	61%
<b>INDICATOR DESCRIPTION</b> Percent of children under 4 months who are breastfed without supplementary feeding or liquids	1998	TBD	TBD
<b>COMMENTS</b> Indicator will be tracked annually through surveys in project areas	1999	TBD	TBD
	2000	TBD	TBD
	2001	TBD	TBD

## ANNEX A OTHER PARTNER ACTIVITIES TO ENHANCE FOOD SECURITY

### A 1 Other Efforts in Food Availability

Several important documents describe both government and international donor food security efforts. They include the *Framework for Economic Policy* (DCPE) by the IMF and World Bank in November 1996, SECALINE's *Strategy for Food Security* presented at the World Food Summit (November 1996), the *Public Investment Plan* (PIP), the *National Indicative Program* (PIN) established with support from the EU in March 1997, the *Agricultural Strategy Note* (ASN) in February 1994 which led to the World Bank-supported September 1997 version of the *Rural Development Strategy*, and the *Document de Politique de Developpement Rural* in February 1994.

The Framework for Economic Policy (*Document Cadre de Politique Economique*) is the IMF and World Bank-supported blueprint for development in the principal sectors commencing with education, health, agriculture, public works, and general security. It stresses the need for market development, private sector development, foreign investment, disengagement of the state in the productive sector, and a war against poverty, most of which include significant food security elements.

The *Politique Agricole et Alimentaire* (August 1997) describes the range of donor and GOM funded activities currently being undertaken (page 80) to address agricultural production, infrastructure and marketing of both food and non-food crops. The same document describes the evolution of food security within the Ministry of Agriculture (page 220).

The Food Security Service (SSA) of the Ministry of Agriculture is attached to the Ministry General Secretariat. Along with a focus on availability and access, the SSA is also concerned with a focus on the nutritional dimension of food security (utilization). The SSA is responsible for coordinating food security actions, developing plans of action, and working with donors concerned with food security (Health, Education, Environment, Research, Population, Commerce, etc.). Among the projects currently being undertaken under the National Plan of Action on Nutrition (arising out of the 1992 International Conference on Nutrition—CIN) are 1) Community Based Nutrition Projects (NAC, see below), 2) Special Food Security Program (PSSA), and 3) National Community Based Nutrition Program (PNNC). The World Bank's 1994 Agricultural Strategy specifies a role for the Ministry of Agriculture beyond the role of a participant in externally funded initiatives. This role includes support to increasing food production leading to improved distribution, access and consumption.

Despite the plethora of donor funded assistance efforts concentrated principally in the southwest, most of even the southernmost Malagasy population is not reached and/or is not greatly affected by agricultural improvement efforts. The scale and nature of many such efforts has limited the impact of these activities.

SECALINE's current Food Security and Nutrition Project, following on an earlier effort to develop a national strategy in the War Against Poverty is funded by the GOM, the World Bank, FAO, UNICEF, WFP and Japan and is under the Prime Minister's Department. It is a multi-faceted program and is expected to run through the end of 1998 with only certain aspects continuing beyond. Significant components of SECALINE efforts are 1) the evaluation of the food security

situation at the national level, 2) development of strategies to address food insecurity, and 3) the development of action plans. In addition, SECALINE since 1993 has been pulling together data from other major surveys (SMTIS and EPM) to investigate the causes of food insecurity at the national and regional levels. The resulting GOM strategy document, reviewed at a broadly attended workshop in December 1996, was adopted by the GOM on December 5<sup>th</sup>, 1997. The implementation of the national Food Security Strategy by the GOM and its partners is less clear and will merit careful monitoring and support. Together with the SSA, FAO has developed the National Program of Enlarged Food Security (PNSAE) which aims to be a catalyst in implementing and coordinating interventions under the National Food Security Strategy. Under this general strategy are a number of initiatives supported by GOM and the donors. It remains to be seen how these various activities will be implemented, where, over what duration, with what resources, and with what results. However, it is clear that USAID's contribution to food security will fall within and support this national strategy.

A recent European Union (EU) Mission has established five intervention areas in Food Security: information system, emergency food stocks, safety nets for vulnerable groups, analysis of public spending and refinement of the EU Food Security Strategy. The EU supported food security strategy is part of an EU effort in six countries to establish an approach on food security even though Madagascar receives relatively little food aid (it was in 38 place in 1995 with only 0.55 percent of aid as food). This illustrates the approach to food insecurity whereby food aid is a significant part of a resource pool but not a driving force. To date, approximately two million ECU were spent on improving national statistics, strengthening the Ministry of Agriculture Crop Estimate Exercise and other databases. EU also supports the early warning system (SAP) which covers the southernmost 87 districts and provides monthly updates on food availability, access and malnutrition with funding through end 1998. EU will be spending 8.5 million ECU for NGOs to undertake food security activities. The EU strategy (page 48) identifies several different instruments including but not limited to food aid (often monetized) programmed with counterpart funds, and Food For Work. The European Union provided 7,300 and 4,500 tons of wheat flour in 1995 and 1996, respectively. The local funds generated were used to fund food security actions (e.g. micro-hydraulics, locust campaigns, etc.). France provided 3,650 tons of wheat flour and 198 tons of vegetable oil in 1995 for sale and generation of counterpart funds for use with French projects. WFP provided 1,500 tons of wheat flour in 1995. The proceeds were used for a range of activities including SECALINE, and other projects. With EU funding, the European Development Fund (FED), supports projects in irrigation, agro-forestry, agricultural supplies, rural grain and food stocks, enhanced rice culture, maximization of waterways, and animal breeding. More EU efforts are described below under Access.

The United Nations Development Program (UNDP/PNUD) in Madagascar focuses on three domains: agricultural intensification through strengthening competence of smallholders, promotion of production and income generation of rural women, and environmental protection.

The Food and Agricultural Organization (FAO) of the United Nations has many interventions supporting increased food availability: the development of poultry farms with rural southern women, traditional fishing in the south, coordination of

the Anti-Locust Campaign of 1997/98, and the coordination of all donors working to support the National Food Security Strategy (under the National Program of Enlarged Food Security, PNSAE) Since the creation of the USAID Food Security and Disaster Unit under HPN, USAID is an active member of the PNSAE

Special Food Security Program (PSSA) Falling under the Ministry of Agriculture, and initiated by FAO with PNUD and French funding, this project aims to transfer techniques of agricultural production in an appropriate and participatory manner, especially in areas of high agricultural potential The projects include the promotion of credit, investment, and reinforcement of decentralized structures to support smallholders It systematically analyzes the constraints to development The pilot phase in five zones starts in 1998

World Food Program (WFP/PAM) Since its debut in Madagascar in 1964, WFP spent \$72.5 million for 16 projects with two being currently operational (described below) Of the total, \$48.2 million were spent on 16 development projects and \$24.2 million on nine emergency operations The funding supported interventions in rural agricultural development (12 percent), human resources (14 percent), forestry (15 percent), war against poverty (19 percent), and emergency operations, mostly cyclones (34 percent) WFP relies on local procurement as well as special importation of commodities In 1995 and 1996, WFP imported 1,500 and 1,000 tons of wheat flour for monetization with the proceeds being used in the SECALINE project (Food for Work) and the Community-Based Nutrition Program (UNICEF-GOM) for assistance to social centers Approximately \$13 million is spent annually on food for work, \$4.5 million on food for education, and approximately \$200,000 on an emergency response, if needed No emergency food distribution is expected in 1998 but food for work is ongoing in the South and can be accelerated in the event of a declared disaster (see below)

There are two projects currently being supported by WFP School feeding with a strong link to the community is being continued for another three years starting in January 1998, especially in the South The second project falls under the SECALINE Food for Work component (with the World Bank) in Antananarivo, National Community Nutrition Program (PCN) in Antananarivo and Toliara, and Assistance to Social Centers in Antananarivo

The World Food Program is submitting its Country Strategy Outline (CSO) in May 1998 This document will demonstrate a shift of focus from emergency response to development assistance using food aid for school feeding, child and maternal nutrition, food for work and disaster preparedness and (with FAO and other donors, EU) early warning systems The WFP Country Strategy Outline is the first step in developing a framework for WFP to operate in a more sustainable development manner While no specific food security strategy exists for WFP in Madagascar, the CSO outlines the WFP approach It is expected that the CSO will evolve into a joint UN strategy by 1999 under the leadership of UNDP WFP recognizes the poverty alleviation strategy of the GOM with aspects being supported by WFP

The FAO Sectoral Fishing Program aims to improve transformation of fish products for transport, increase fish revenues and quality of life The effort is made in six isolated fishing villages south of Toliara and north of the Onilahy

River The World Food Program's Food for Work program is being used to improve village infrastructure

The German Development Organization (GTZ) in one district of Toliara Province, Bekily, has started an 12 year Integrated Food Security Project which, using participatory technologies, addresses food availability through farmer education (sustainable technologies and maximum use of rainfall), women's gardens, village food stocks, access to inputs GTZ also addresses questions of food access and utilization described below in the appropriate sections

A EU-funded project, DELSO, works in the south west of the country with the objectives of improving livestock production through diversification (use of poultry, goats, etc), veterinary support (community partnerships in stocking pharmacies), and water management (collection basins formed by constructing dams at the base of intermittent drainage paths) Condensation in this region is sufficient for goats through leaves on shrub vegetation but is insufficient for drinking and crop production

Project South West (PSO), another French-funded project, also chooses Toliara province but focuses on the high potential crop production area north west of Toliara at the transition between the arid south west and the upland plateau Three project foci are 1) community development through participatory approaches, 2) improving production environment with new techniques, diversification, improved access to export markets and 3) managing environmental risk

## **A 2 Other Efforts in Food Access**

The GOM, World Bank, and IMF have recently concluded negotiations for a second phase of funding for the Economic Structural Adjustment Fund (ESAF) Policy reform will have a beneficial influence on investment and job creation, which should have a positive impact in particular on the urban poor

The National Indicative Program (PIN, March 1997) is supported by the European Union to encourage durable and equitable economic growth It recognizes the important contribution of the private sector and promotes state interventions supporting macro-economic growth including public investment especially in infrastructure It specifies the need to address poverty and maintain public security The project is active in the northern and southern parts of the country, and in several parts of Fianarantsoa Province The focus on poverty alleviation, durable socio-economic development and the protection of the environment is consistent with USAID policy and the National Food Security Strategy The PIN concentrates on transport (40 to 60 percent of resources), rural development including food security developed below (20 to 30 percent of resources), and health/education (10 to 20 percent of resources)

The South West Project (PSO) based in Toliara and funded by the France through 1998, seems to be a model for improving food access through the development of farmer groups, the facilitation of communication between the groups, government and merchants and in general, the professionalisation of farming The project promotes appropriate and sustainable agriculture through both participatory activities and satellite imagery analysis

### **A 3 Other Efforts in Food Utilization**

**Community Nutrition II Project** The World Bank and the GOM are jointly designing an integrated nutrition communication project. The nutrition component is expected to start in the second half of 1998, a World Bank-funded follow-on from SECALINE that is to end in late 1998. The goal is to increase synergy between WB-funded health and nutrition projects. The target of the 1998 to 2003 project is to reduce the rate of moderate malnutrition in under-fives by 50 percent and the rate of severe malnutrition by 60 to 70 percent. The Community Nutrition II Project is expected to work at four levels: communities, primary schools, health services in target districts, and small holder agriculture. These activities will rely on government ministries (health, education, and agriculture) as well as NGOs in the peripheral areas that will do the bulk of community level nutrition activities. The project has identified a list of indicators but has yet to establish targets or focus areas.

**NAC Community Nutrition Project** NAC is a UNICEF, inter-Ministerial and NGO project for 1996 to 2000, in four provinces. The BCC and food production activities compliment those elaborated in the national food security strategy and World Bank's SECALINE activities in the Provinces of Toliara and Antananarivo. The NAC Project shares many of the objectives noted in the Nutrition II Project. Moderate and severe malnutrition are to be reduced from the 1993 level of 40 percent to 20 percent in Year 2000 (for under-fives). Low birth weight is to be reduced from 12 percent (1992) to nine percent. Vitamin A deficiency is to be eliminated and nutritional surveillance of child growth is to be adopted. In early 1998, NAC is active in 27 sites in the province of Antananarivo, 33 sites in Toamasina, 40 sites in Toliara, and 41 sites in Fianarantsoa.

### **A 4 Other Efforts in Disaster Management**

The National Disaster Management Unit (CNS) was created by government decree in 1985 to provide assistance in prevention and response to populations affected by disaster. The Ministry of the Interior presides over the CNS, which is composed of representatives of the presidency, the Army, Gendarmes, Police and the Ministry of Information. Representation is also extended to include Private Voluntary Organizations, as designated by CNS. The decree also provides for the formation of special commissions when applicable and emphasis is put on the creation of local relief committees. The CNS started functioning in 1994 when a permanent secretariat was formed, its main task being coordination. There are currently eight staff members of the CNS. At the time of the February 1997 OFDA Mission to Madagascar, CNS was not considered to be truly operational in disasters but it provides operational guidance and coordinates relief supplies. The CNS depends on NGOs, mostly international, to carry out relief work and is apparently able to call on government funds for some of its activities, and to access two or three large trucks for the movement of relief commodities.

The Disaster Response Steering Committee (CRIC) was formed in the summer of 1996 to promote coordinated, standardized and efficient disaster preparedness and response. It is composed of representatives of the Ministry of

the Interior National Disaster Management Unit (CNS), UNDP, UNICEF, CARE, CRS, ADRA, MSF, USAID and the National Office of the Environment (ONE) Together the CNS and the CRIC developed a process for evaluating damages, following a disaster, including a set of tools to be used by trained evaluators for an initial assessment. The goal is to prepare baseline data in all cyclone vulnerable communities and to have damage assessment teams ready to go and come back with updates within the first week following a disaster.

The mandate of the Crop Protection Department (DPV) of the Ministry of Agriculture is the protection of agriculture from all potential enemies. Locust Control is one of the permanent four services of the DPV and has existed since 1931. GTZ has been a strong supporter of DPV since 1988, contributing to research, surveillance, eco-toxicology and the reinforcement of the Betsioky Center for Locust Control. In addition to USAID's contribution, other donors supporting locust control have been France, Great Britain, Germany and FAO.

**UNDP/UNICEF** The UNDP Representative assumes the traditional role as disaster coordinator within the donor community and has agents working closely with CNS to strengthen local government capacity in disaster PMP. A CNS proposal approved for a UN funding contains a project named "Project III Preparation for and Response to Disaster", which entails mainline strengthening of the CNS. The objective of this three-year project is to implement a rapid action and decision making system for responding to disaster.

British Government Funding has been approved for the production and dissemination of district disaster guidebooks, brochures, etc., organized under CNS. CNS activities, strengthened with these new funding schemes, are set for start-up in March 1998. A number of other United Nations agencies have been active in disaster response and are capable of mobilizing various types of resources, medicines, food, shelter, and cash.

In addition to the two developmental components described under the food availability section, the World Food Program (WFP) has the capacity to respond to emergencies in its collaboration with the National Disaster Management Unit. WFP recently employed a national Vulnerability Assessment and Mapping (VAM) Officer who will work closely with the USAID FS/D Unit. The Disaster Safety Net exercise to be developed by WFP will be a monitoring and coordinating mechanism at the District, Provincial and National levels to refine the targeting of beneficiaries. A disaster safety net notion will be at the basis of WFP's strategy. In accordance with the GOM's Poverty Alleviation Strategy, the emphasis will be placed by WFP on expanding labor-intensive public works (FFW) in times of emergency and on therapeutic and supplemental feeding programs together with rehabilitation and expansion of rural health programs and school feeding.

Vonjy Voina is a project under the Section for Development Activities, or SAF (Sampan'Asa Fampanandrosoana), of the Church of Jesus Christ in Madagascar (in Malagasy, FJKM Fiangonan'i Jesosy Kristy eto Madagasikara). The SAF collaborates with CARE on cyclone preparation and relief in eastern coastal communities. The project's recent inclusion in, and attendance at, CRIC meetings confirms its intention to heighten participation in disaster PMP. Currently SAF operates through 113 structure units and 812 community groups representing all regions of Madagascar except the southwest. Vonjy Voina's

contribution to CRIC will be mainly in the areas of training and information collection

Doctors Without Borders (MSF) was established in 1987 in Madagascar and currently has a staff of three expatriates and 47 nationals. In response to disaster, MSF is capable of quickly mobilizing considerable relief resources (particularly medicines and services) in addition to their ongoing health, nutrition and sanitation development activities.

## APPENDIX B ANNOTATED BIBLIOGRAPHY

Bureau for Humanitarian Response (BHR) "Food Aid and Food Security Policy Paper" USAID Policy Paper Washington DC February 27, 1995

CARE Madagascar "Antananarivo Urban Household Food and Livelihood Security Program" CARE Madagascar Development Activity Proposal FY 1998-2002 September 10, 1997

Delegation de la Commission Europeenne a Madagascar "La Securite Alimentaire a Madagascar" Analysis by EU Juin, 1996

Hammock J , and S Lautze "Building a livelihood strategy Lessons learned from the field" and "Operational Guidance" Mimeo The Feinstein International Famine Center, School of Nutrition Science and Policy, Tufts University, MA (not dated)

IFPRI "Making food aid work for long-term food security" Proceedings of a USAID/IFPRI Workshop, Addis Ababa, Ethiopia, March 27-30, 1995 IFPRI, Washington DC

Refeno G , Rabeza V , Mboup G , J Shoemaker "Enquete Nationale Demographique et Sanitaire 1992" Demographic and Health Survey with Republic of Madagascar, National Center of Research on the Environment and Macro International, Antananarivo February, 1994

Republic of Madagascar "Document de politique agricole et alimentaire Premiere partie -- Orientations et actions en cours" Document provisoire Ministry of Agriculture, August, 1997

Republic of Madagascar "Atelier National sur La Strategie nationale de Securite Alimentaire et Nutritionnelle a Madagascar (SECALINE)" ACTES 09-13 December, 1996

Republic of Madagascar "La situation alimentaire et nutritionnelle a Madagascar e Strategie nationale de securite alimentaire et de nutrition (SECALINE)" Government of Madagascar (IDA No 2472 MAG) Janvier, 1997

Republic of Madagascar "Plan National D'Action pour la Nutrition - Madagascar" Draft paper for International Conference on Nutrition Antananarivo, September 1997

Republic of Madagascar "PINC Programme Integre de Nutrition Communautaire" Mimeo document, Antananarivo, June 2, 1997

Republic of Madagascar & UNICEF "Plan d'Action National 1997 Project de Nutrition a Assise Communautaire" Ministry of Health, Ministry of Agriculture and Rural Development, Ministry of Applied Research and Development Antananarivo, January 1997

Setzer JC Wilder EM J Andrianansata "Madagascar Household Child Health and Nutrition Survey' Report for Madagascar Ministry of Health and Population by Basics Project, USAID January 1997

USAID Madagascar "Madagascar Country Strategy Plan CSP" Antananarivo February 1997

USAID Madagascar "Mission Disaster Relief Plan for Madagascar" Antananarivo June 11, 1997

USAID Madagascar "Food Aid Management Plan for USAID Madagascar" USAID Program Development and Assessment Office Program Division (PDA/PR) Antananarivo July, 1995

USAID Madagascar "Madagascar Disaster Preparedness Assessment Mission" USAID Bureau for Humanitarian Response, Office of Foreign Disaster Assistance Antananarivo August, 1996

World Bank "The Political Economy of Poverty, Equity and Growth Malawi and Madagascar" Fred Pryor, Oxford University Press, 1990

World Bank "Madagascar Poverty Assessment" Vol 2, Antananarivo June 1996

World Bank "Aide-memoire de la Mission de Preparation du 24 Juin au 11 Juillet 1997 Preparation du Project de Nutrition Communautaire II" World Bank, Antananarivo 18 July 1997

World Food Program (PAM) "WFP Country Strategy Outline -- Madagascar" Draft, PAM Antananarivo, Juin 1997

Whitlock R , B Cogill "Assessment of Food Security in Mozambique" Report for USAID Mozambique, February, 1996