

PD-ABF-644

73600

**MADAGASCAR  
COMMERCIAL AGRICULTURAL PROMOTION  
( C A P )**

**PROJECT IDENTIFICATION DOCUMENT**

11 December 1992

BEST AVAILABLE COPY

A

AGENCY FOR INTERNATIONAL DEVELOPMENT  
PROJECT IDENTIFICATION DOCUMENT  
FACESHEET (PID)

1. TRANSACTION CODE  
Revision No.  
 A = Add  
 C = Change  
 D = Delete

DOCUMENT CODE  
1

2. COUNTRY/ENTITY  
MADAGASCAR

3. PROJECT NUMBER  
687-0118

4. BUREAU/OFFICE  
AFR  
A. Symbol  
B. Code  
06

5. PROJECT TITLE (maximum 40 characters)  
Commercial Agricultural Promotion

6. ESTIMATED FY OF AUTHORIZATION/OBLIGATION/COMPLETION  
A. Initial FY 94  
B. Final FY 97  
C. PACD 98

7. ESTIMATED COSTS (\$000 OR EQUIVALENT, \$1 = )

FUNDING SOURCE	LIFE OF PROJECT
A. AID	29,000
B. Other U.S.	
1.	
2.	
C. Host Country	5,000
D. Other Donor(s)	
<b>TOTAL</b>	<b>34,000</b>

8. PROPOSED BUDGET AID FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. 1ST FY 94		E. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) DFA				7,700		29,000	
(2)							
(3)							
(4)							
<b>TOTALS</b>					7,700	29,000	

9. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

10. SECONDARY PURPOSE CODE

11. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)  
A. Code  
B. Amount

12. PROJECT PURPOSE (maximum 480 characters)

To increase domestic trade in cash crops from the Fianarantsoa and Mahajanga high potential zones.

13. RESOURCES REQUIRED FOR PROJECT DEVELOPMENT

Staff: Design Specialist  
Ag. Economist  
Agribusiness Advisor (Team Leader)  
Financial Sector Advisor  
Seed Specialist  
Road Rehab. Specialist

Contracted under Design and Performance (DAP) contract funded from PD & S

REDSO: RLA, Contract Officer - 1 week each  
REDSO: Envr Officer for IEE - 2 weeks

14. ORIGINATING OFFICE CLEARANCE  
Signature: William Hammink  
Title: Chief, Project Development Office  
Date Signed: MM DD YY 11 11 92

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION  
MM DD YY

16. PROJECT DOCUMENT ACTION TAKEN  
 S = Suspended  
 A = Approved  
 D = Disapproved  
CA = Conditionally Approved  
DD = Decision Deferred

17. COMMENTS

18. ACTION APPROVED BY  
Signature: George Carner  
Title: Mission Director USAID/Madagascar

19. ACTION REFERENCE  
20. ACTION DATE  
MM DD YY 11 11 92

## INSTRUCTIONS

- Block 1 - Enter the appropriate letter code in the box, if a change, indicate the revision number.
- Block 2 - Enter the name of the Country, Regional, or other Entity.
- Block 3 - Enter the Project Number assigned by the field mission or an AID/W bureau.
- Block 4 - Enter the sponsoring Bureau/Office Symbol and Code. *(See Handbook 3, Appendix 3, Table 1, Page 1 for guidance.)*
- Block 5 - Enter the Project Title *(stay within brackets; limit to 40 characters).*
- Block 6 - Enter the estimated Initial (A) and Final (B) FY of the Authorization/Obligation, and Project Assistance Completion Date (PACD) (C).
- Block 7 - Enter the information taken from the 'Estimated Cost Table' in the PID.
- Block 8A. - Use the 'Alpha Code'. *(See Handbook 3, Appendix 5B, Table 2, Page 2 for guidance.)*
- Block 8B. - See Handbook 3, Appendix 5B for guidance.
- Blocks 8C., D., & E., - Enter all amounts in thousands of U.S. dollars.
- Blocks 9 & 10 - See Handbook 3, Appendix 5B for guidance.
- Block 11 - Enter the code and amounts attributable to each concern for 'Life of Project'. For coding see Handbook 3, Appendix 5B, Attachment C.
- Block 12 - Enter the 'Project Purpose' from the PID. If more than one (1), list each one (1) in order of priority *(stay within brackets; limit to 480 characters).*
- Block 13 - Summarize any planning resources needed to develop the project in terms of staff and funding required. For staff, indicate whether direct hire or contract staff. Indicate the established amount and source of funding required (operative expenses or Mission funds).
- Block 14 - This block is to be signed and dated by the Authorizing Official of the originating office. The PID will not be reviewed if the PID Facesheet is not signed and dated. Do not initial.
- Block 15 - This date is to be provided by the office or bureau responsible for the processing of the PID.
- Block 16 - This block is to be completed by the authorized representative of the office or bureau responsible for the processing of the PID.
- Block 17 - Enter any comments on the action taken.
- Block 18 - This block is to be signed and dated by the Approving Official. Do not initial.
- Block 19 - Identify the action document i.e., memorandum, cable.
- Block 20 - Enter the data of the action document.

MADAGASCAR COMMERCIAL AGRICULTURAL PROMOTION  
Project Identification Document (PID)

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# MADAGASCAR COMMERCIAL AGRICULTURAL PROMOTION

## Project Identification Document

### EXECUTIVE SUMMARY

Agriculture is the dominant sector of Madagascar's economy, contributing about 30 percent of the total gross domestic product (GDP) and 80 to 90 percent of exports. After a decade or more of serious decline, production rebounded in the 1986 - 1990 period with annual growth rates of two to five percent. Liberalization of the markets was a principal factor in the turnabout for local foodcrops. Other policy reforms to reduce Government intervention strengthened the impact. In the last two years, however, agricultural growth has slowed again. The political turmoil of 1991, which led to difficulties in overall economic management and to disruption of services and trade, explains part of the slowdown. In addition, however, it has become apparent that more concerted efforts to address the non-price constraints to expanded agricultural production and marketing need to be made.

The \$29 million five-year Commercial Agricultural Promotion (CAP) Project, plus the related Title III \$18 million multi-year program, responds both to the opportunities presented by prior policy reform and to the problems which continue to characterize the agricultural sector: poorly-integrated internal markets, lagging income growth, and food insecurity.

Actions will be supported which will increase domestic trade of cash crops. Project activities will take place in two high potential zones (HPZ) of the country: the Northwest zone of Mahajanga, which contains substantial fertile land for increased production; and the southern Highlands zone of Fianarantsoa, where the introduction of new, off-season crops could take advantage of the abundant labor in the region.

Briefly put, the Commercial Agricultural Promotion Project will:

- Support agribusinesses, traders and groups of agricultural entrepreneurs working with producers associations and producers;
- Provide needed inputs for commercial agriculture; and
- Support road rehabilitation and maintenance.

The purpose of the Project is to increase domestic trade in cash crops from the Fianarantsoa and Mahajanga high potential zones. The principal specific indicators for purpose accomplishment are:

- increased domestic rice production and trade, particularly in the region of Mahajanga;
- increased production and sale of off-season crops, particularly in the region of Fianarantsoa;
- greater volumes of agricultural trade, particularly in areas where Project resources have led to concrete improvements in transport and communications infrastructure;

- lower price for transport of commodities where road maintenance has occurred; and,
- increased numbers of market participants (transporters, processors, collectors) in areas where road maintenance has occurred.

Expected impact of increased trade will be increased employment and incomes of up to 200,000 farmers and rural entrepreneurs in HPZs and regional economic growth multiplying national growth.

USAID/Madagascar's new Office of Market and Business Development (MBD) will be responsible for the supervision and overall implementation of the CAP Project. It is proposed that a U.S. organization, either a for-profit firm or non-profit organization, competitively selected be responsible for both the design and implementation of the Project under the Design and Performance contracting approach. The U.S. organization will be responsible for implementing all Project components but will be expected to sub-contract with Gray amendment firms for those components where the lead contractor does not have direct expertise.

A Project Identification Document (PID)

COMMERCIAL AGRICULTURAL PROMOTION  
IN MADAGASCAR

I. Background

Agriculture is the dominant sector of Madagascar's economy, contributing about 30 percent of the total gross domestic product (GDP) and 80 to 90 percent of exports. Agriculture in Madagascar benefits from the country's varied topography (which permits both tropical and temperate crops to be grown), relatively reliable rainfall, a substantial historical investment in water control infrastructure for irrigated rice production, and a level of biodiversity which is nearly unparalleled in the world. The food economy is highly diversified and Madagascar has traditionally dominated the world vanilla, clove, and black pepper markets. Food balance sheets show that, overall, the country has a significant surplus of food.

It is, therefore, surprising to note that:

- internal trade (within Madagascar) is less active and efficient than its external trade;
- the productivity and incomes of farmers are relatively low and have declined over the past two decades for many households; and
- many Malagasy households are food-insecure (in some regions of the country, a majority of them are) and malnutrition rates are high.

The project described in this PID proposes to address these problems by focussing support on actions which will lead to a short- to medium-term increase in Madagascar's marketed agricultural production.

A. Current patterns of commercial agricultural production in Madagascar

At the present time, Madagascar's farmers each year produce about 2.4 million metric tons (MT) of paddy rice, 2.2 million MT of cassava, almost 500,000 MT of Irish potatoes, about 155,000 MT of maize, approximately 30,000 MT of peanuts, and almost 50,000 MT of beans and peas. Almost 2 million MT of sugarcane is also grown for transformation into sugar. Over 15,000,000 animals are raised, principally for meat.<sup>1</sup> The most recent estimates on aggregate caloric availability indicate that average levels are above the 2,200 calories/person/day minimum recommended by FAO/WHO. Actual calorie intakes, however, vary widely among regions and households.<sup>2</sup> An anthropologist with long involvement in rural Madagascar

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<sup>1</sup> AIRD Regional Specialization and Agricultural Growth in Madagascar. Draft Report. Feb. 1992. Several tables. This report notes 10,000,000 head of cattle. Abattoir data from elsewhere indicate substantial consumption of pork and mutton as well; 5,000,000 seems a reasonable estimate for the population of pigs and sheep.

<sup>2</sup> Lowdermilk, Melanee Madagascar Food Needs Assessment: Final Report, June, 1989. p. 7.

reports that increased demographic pressure has led rice-producing households in the productive Lac Alaotra area to consume 70 percent of their own production -- as compared to 25 percent some years ago. And "in the Highlands, it is now frequent [for households] to spend a day without eating rice and survival is ensured mostly by manioc [cassava]."<sup>3</sup>

Estimates of the percentages of agricultural commodities marketed vary not only by year but by region and crop and none appear to be very accurate. However, information available indicates that at least 20 percent of the rice enters into domestic commercial channels and substantial portions of the harvests of peanuts and beans/peas are marketed as cash crops. The bulk of the cassava is used for home consumption although potatoes grown in the central Highlands of the country are apparently marketed locally. Virtually all sugarcane and all cotton and tobacco production is, of course, marketed as it must be processed before sale.

In effect, there are three distinct agricultural production patterns in Madagascar. Each pattern implies a different attitude to production or approach to commercialization of the output<sup>4</sup>:

- First, there is production undertaken principally or exclusively for the market (internal or export). This production is only minimally processed (drying or hulling) and farm sales go directly through market channels to buyers. About 600,000, or just over 30 percent, of Madagascar's 1.6 million farm households are involved in such production. Many, principally those living along the east coast, produce vanilla, robusta coffee, cloves, and pepper with the sole purpose of selling 100 percent of the output for export. In a few well-defined areas, farmers grow foodcrops (e.g., irrigated rice in Lac Alaotra and Marovoay) principally for the urban markets in Antananarivo and Toamasina (Tamatave).
- Second, there is the common pattern of farm production principally for home consumption with sales of "surplus" to the market. About 900,000 farm households, or about 60 percent of the total, fall into this group. Conventional wisdom has it that financial needs drive the definition of "surplus" and that many households are forced to buy additional foodstuffs for consumption months after they have marketed their "surplus."

Almost three quarters of the households in this group are estimated to be chronically "food deficit", that is, unable to produce all their household food requirements with their

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<sup>3</sup> Verin, Pierre Socioeconomic Factors in Economic Development in Madagascar. Report for USAID, March, 1992. p. 16.

<sup>4</sup> Estimates of the numbers of households in each category are based on the World Bank Rural Finance Sector Review, pp. 8 and 9. The information in this review is, in turn, drawn from the Agricultural Census of 1985 and a study by Benz on Poverty Alleviation in Madagascar, 1989.

agricultural resources.<sup>5</sup>

- Third, there are several areas where crop production is carried out to provide intermediate goods to some other process which substantially raises value added and/or results in two or more differentiated products. This pattern of production is often linked to state-owned enterprises (such as cotton production for HASYMA, sugarcane for NAMAKIA, wheat for KOBAMA) or donor supported schemes (e.g., dairy production in Lac Itasy). There are, however, several "professional" agricultural enterprises in the private sector which integrate production and processing operations in a single firm (e.g., the CIM company in Mahajanga which produces cured tobacco, SEAD and URCOOPA which produce maize as a component in animal feed, etc.). It is estimated that modern, relatively large-scale irrigation schemes and organized commercial production operations currently include about 160,000 households (about 10 percent of the farm population).

#### B. Market liberalization and the impact on agricultural markets

While the socialist orientations of the Government of Madagascar (GOM) which was in power from 1974 to 1991 led the Government to attempt to control all prices and investments from the center for many years, it was apparent by the early 1980s that these policies were not working. Economic stabilization efforts began in 1981/82. In 1985/86, the GOM undertook a structural adjustment program which, in its early stages, liberalized the marketing of agricultural commodities (with the exception of vanilla).

Analyses by Eliot Berg and others in 1986 and 1989 indicated that the liberalization of food markets had an almost immediate stimulating effect on the production and marketing strategies of rural households.<sup>6</sup> A follow-up study by Abt Associates in 1991 confirmed the changes.<sup>7</sup>

#### C. USAID involvement in agricultural production and marketing to date

USAID supported this market liberalization process, beginning in 1985 with the Madagascar Agricultural Rehabilitation Support (MARS) nonproject and project assistance. Additional support for the liberalization of export crop marketing was provided through nonproject assistance in the Madagascar Agricultural Export Liberalization Program (MAELP). USAID continues to

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<sup>5</sup> It is also this group which constitutes the bulk of the rural food-insecure population as they are reportedly unable to complement their own production with purchases made using earnings from off-farm employment.

<sup>6</sup> Berg, Eliot et al. The Impact of Economic Liberalization on Madagascar's Agricultural Sector and Implications for USAID Strategy. Development Alternatives, Inc. 1990.

<sup>7</sup> Abt Associates The Rural Marketing Systems in Madagascar. October, 1991.

support efforts which will take advantage of this improved climate through the Madagascar Agricultural Export Liberalization Support Project (MAELSP) which has been extended to focus on market expansion for up to five promising commodities, including high-quality arabica coffee and dry beans. Since 1986, USAID has also supported an agricultural research project implemented by the International Rice Research Institute (IRRI). This is aimed at boosting yields of rice, the staple of the Malagasy diet, through better varietal selection and improved cultural practices.

## II. Relation to the Development Strategy of the Government of Madagascar

Madagascar is currently undergoing a significant democratic transition. Mass demonstrations in 1991 led to the formation of a coalition interim government charged with maintaining the necessary functions of government while a new constitution was drafted. A new democratic constitution was approved in national referendum on August 19, 1992. The first round of the presidential elections under the new constitution took place on November 25, 1992 and the second and final round should take place in January 1993. Legislative elections are planned for March-April 1993. More than 60 registered parties will be jockeying for position and voice in the new government. Whatever the results of the electoral process, the move toward a more transparent and participatory government within a decentralized democratic framework seems irreversible.

The interim coalition government in power as this Project was being designed sees itself as a caretaker government and is neither mandated to nor capable (in the current competition between political groups) of formulating or implementing any new policy directions. However, it was confirmed repeatedly in both public and private sector interviews that the commitment to a market economy is here to stay. There is no going back.

It is assumed, therefore, that the market-oriented policies instituted over the 1980s will be continued, and that the public expenditure and investment processes inaugurated in the last three years and the generally good level of economic management exercised in recent years will continue. The timetable for development of the Project Paper (PP) (Section VIII below) will permit the specific views and policies of the new government to be taken into account.

## III. Relation to the USAID/Madagascar Strategy

The proposed Project is the key intervention for accomplishing the second strategic objective in the Mission's program logframe: high potential zone growth multiplies national market activity. This objective, together with the companion strategic objective of establishing a competitive pro-business climate, is expected to contribute significantly to achievement of one of USAID/Madagascar's subgoals -- increase investment and employment in the private sector -- and to the goal of broad-based, market-led sustainable economic growth.

Increased commercial agricultural production for the internal market should be a source of incomes and jobs for poor rural households as well as those better off and a source of food for urban as well as food-deficit rural

consumers. Increased marketing opportunities created by the MAELSP activities will complement those associated with the Commercial Agricultural Promotion Project activities. The CAP Project will also facilitate farmers' profitable use of the rice technologies and varieties developed in the Mission-supported IRRI/FOFIFA project. Finally, CAP activities will interface with proposed assistance for the financial sector (proposed nonproject assistance under AEPRP) and will be reinforced by a future activity focussing on the expansion of road and communications infrastructure (a project tentatively called "MIX", Market Infrastructure Expansion).

#### IV. The Project Proposal

##### A. Problem

The market-oriented policies launched by the Government in the mid-1980s as part of a major structural adjustment program had an almost immediate positive impact on agricultural production and marketing in the late 1980s, particularly for food crops. People reportedly started growing new crops in new places and channeling them to new markets as quickly as they could. Real gains were spotty and closely correlated with good access to transport, functional irrigation infrastructure, and robust demand for the products in question -- but the glass was at least half-full.<sup>8</sup>

Growth in export crop revenues, however, suffered a decline in the same period as demand and/or prices in world markets for Madagascar's principal exports dropped significantly. Coffee receipts, for example, dropped from \$93 million in 1987 (28 percent of total exports) to \$23 million in 1991 (less than 8 percent of the export value, f.o.b.).<sup>9</sup> Interest in non-traditional exports was sparked by this reversal of prospects for traditional exports, and total export revenues dropped far less precipitously than those for coffee. But the overall impact of the declining prices for traditional export crops, especially on incomes at the farm level, was negative.

In short, it became evident during this period of adjustment that overall agricultural income and employment would not grow steadily unless new export opportunities were found and:

- **internal trade** (within Madagascar) became more efficient and markets better integrated;
- **farmers began to experience higher productivity and incomes** and, therefore, to increase their capacity for sustainable investment; and

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<sup>8</sup> To paraphrase Eliot Berg et al. *The Impact of Economic Liberalization on Madagascar's Agricultural Strategy and Implications for USAID Strategy*. DAI. 1990.

<sup>9</sup> IMF Staff Report for Article IV Consultation, June 11, 1992. p. 33.

- the nearly half of rural Malagasy households who are food-insecure could somehow participate more actively in more productive agricultural enterprises.

Madagascar's internal trade in agriculture is hampered by inadequate transport infrastructure, poor communications, and a financially-constrained trading sector. By contrast, external trade, which is largely agriculturally-based, is active and relatively efficient because export-oriented agricultural production, with a long history of successful exports, has been located in coastal regions close to ports and is, therefore, less affected by the poor road transport infrastructure than internal trade. The export trade is also relatively well-organized by private and public companies who are specialized in the production, processing, and/or marketing of the various export crops and have longstanding access to commercial finance. Much of the external trade is organized through vertically-integrated companies supplying credit and expertise to producers and producer associations. The export trade faces a fairly robust world demand for its products (except cloves) although world prices challenge Madagascar's ability to keep production costs at competitive levels. Internal trade is more loosely organized; many of the participants have no access to formal financing and limited sources of informal credit. Internal demand for local production, moreover, has been weakened by overall economic deterioration and limited personal incomes. In sum, those Malagasy farmers, agricultural entrepreneurs and traders interested in increasing production for the domestic market face formidable constraints in transport, production inputs, market outlets, and overall demand.

Malagasy producers (particularly of food crops) also find their overall productivity and income opportunities reduced by constraints of technology, production support (water control structures, input delivery, rural credit, etc.), the availability of appropriate land, and the current high levels of rural insecurity. Over the last decades, therefore, farmers in many areas have reverted to production strategies centered simply on production for family consumption. Of the factors contributing to the problem of declining rural productivity and incomes, the ones which are most difficult to address are those of rising population densities in certain areas and an increasingly apparent land shortages. While there is expansion room in some agricultural zones, and "permanent" migration has apparently increased in momentum over the 1980s, the newly-settled land requires substantial investment in development if it is to be permanently productive. Migrants, however, are reported to be reluctant to invest in land improvements in areas which they do not consider to be "home."

Nevertheless, migration has been an important way for Malagasy households to cope with growing rural food insecurity in the highland areas and may continue to be so for the short- to medium-term. But sustainable improvements in rural food security will require greater incomes and agricultural productivity in all agro-ecological regions, that is, resolution of the income and employment problems cited in the paragraph above. The "sending" regions need to improve the capacity of seriously-degraded agricultural land to support the remaining population; the "receiving" regions need to offer good enough income-earning opportunities to justify the move and to encourage permanent investments in increasing

productivity for the long-term. In both cases, special efforts have to be made to ensure that the needs of the poorest (many of them in women-headed households) are considered.

In short, the problems of inactive and inefficient internal market linkages, low rural incomes and productivity, and food insecurity in Madagascar are highly correlated. It is assumed here that the solution of one problem will have a major effect in resolving the others. The Project objectives, therefore, have been articulated below to address all three simultaneously.

However, the factors which contribute to these problems are often less related to each other; each requires a separate solution before the larger, overlying problems can be resolved. An expanded network of well-maintained rural roads may be necessary for more efficient internal marketing of agricultural production but it will be far from sufficient to stimulate a permanent increase in farm households' productivity. The design challenge faced here, then, has been the prioritization of the constraints which underlie the three inter-related problems and the identification of appropriate means to relieve those constraints which are most binding.

#### B. Rationale for Proposed Approach

The design process began with a systematic examination of the non-price factors which affect commercial agricultural production in Madagascar and the operation of the markets for various agricultural commodities. The decision to focus on non-price factors stemmed from market analyses conducted by Berg and Abt as well as from the views expressed often during interviews: the markets for agricultural commodities remain liberalized and prices are responsive to supply and demand if there are no other barriers to trade. In addition, even with the political changes in progress, the Government of Madagascar will remain committed to market-determined pricing for agricultural commodities. Thus, there was a justification for emphasizing the "other" constraints to commercial agricultural production and marketing.

Included in the list of "other" constraints examined were:

- production infrastructure (particularly irrigation facilities);
- public sector support services (research, extension);
- transportation infrastructure;
- communications infrastructure and market information availability;
- financial services;
- the availability of production technologies (seeds, fertilizer, farm implements);
- marketing technologies (i.e., the postharvest functions involved in storing, transforming and packaging agricultural products); and
- organization of farm households.

However, even rapid examination of the constraints listed indicates both the number of potential areas for interventions and the complexity of the task. The first analytical cut was thus made by assessing, within the

current context of Madagascar, which factors were most inhibiting to a short- to medium-term increase in commercial agricultural production and marketing or, put another way, which interventions seem to be most necessary for improving the prospects for commercial agricultural production and marketing.

USAID/Madagascar's strategic objectives and management constraints were then brought into the analysis in order to define, in implementation terms, those areas for intervention which would:

- contribute to increased volumes of marketed agricultural output in the relatively short term (three to five years), particularly in the high potential zones (HPZ) of Mahajanga and Fianarantsoa;
- be consistent with the assessment of regional comparative advantage made by AIRD as well as the Mission's understanding of production prospects in the two zones;
- involve as many rural households in Project-related activity as possible, either through production, marketing, or construction activities; and
- engage the formal private sector to the maximum extent possible in the implementation of Project activities.

As implied in the first criterion, interventions targeted at high potential agricultural zones can help to accelerate national economic growth. Linkage models for the Malagasy economy show that diversification and commercialization of small-farms in HPZs will have multiplier effects on economic activity throughout the country<sup>10</sup>.

This was further confirmed by the AIRD report on regional specialization which provides a more rigorous comparative database on potential rates of return to various agricultural activities all over the country.

By focussing on (1) the organization and successful operation of a growing number of commodity sub-sector agricultural entrepreneurs and their relationships with producer associations, (2) the supply of inputs to support commercial agricultural production and trade, (3) the maintenance of rural roads for the evacuation of marketable produce, and, if Project Paper (PP) analysis shows it is necessary, (4) the provision of financial services to agribusinesses, USAID/Madagascar has defined a package of assistance in which: elements will complement each other to achieve the objectives sought and maximize use of the existing human resource and organizational capacity of current institutions. The Project will focus on the development of improved capacity and working relationships between existing agribusinesses and producer associations. The geographic scope of the project will be limited to two regions, Mahajanga and

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<sup>10</sup> Dorosh et al, Agricultural Growth Linkages in Madagascar, UNDP/World bank, 1991.

Fianarantsoa (see map). The amount of resources available is not insignificant compared to resource requirements and they should be sufficient to make a measurable difference in peoples' lives within the two HPZs.

#### C. Objectives and Expected Accomplishments

The goal of the Commercial Agricultural Promotion Project is to increase private investment and employment in commercial agriculture. The principal indicators of goal achievement will be an expansion in the volume of domestic agricultural marketing activity, particularly of food crops, increased number of agribusiness enterprises, and evidence that the increased market participation has increased rural households' incomes, access to food and employment.

The purpose of the Project is to increase domestic trade in cash crops from the Fianarantsoa and Mahajanga high potential zones. The principal indicators for purpose accomplishment are:

- increased domestic rice production and trade, particularly in the region of Mahajanga;
- increased production and sale of off-season crops, particularly in the region of Fianarantsoa;
- greater volumes of agricultural trade, particularly in areas where Project resources have led to concrete improvements in transport and communications infrastructure;
- lower prices for transport of commodities where road maintenance has occurred; and,
- increased number of market participants (transporters, processors, collectors) in areas where road maintenance has occurred.

The major beneficiaries under the Project will be rural households and mainly rural agribusinesses and entrepreneurs in the two target HPZs. Annex B. provides more detail on project beneficiaries.

#### D. Project Outline and How It Will Work

The Commercial Agricultural Promotion Project will focus on three areas of activity, providing either direct dollar support, technical assistance, or financing in the form of local currency (Francs malgaches, FMG).

The three activities proposed are:

- Support to agribusinesses, traders and groups of agricultural entrepreneurs working with producer associations and producers;

- Increase and more timely input supply; and
- Support road rehabilitation and maintenance.

In addition, a possible fourth component to be further studied during PP design relates to expansion of agricultural lending for commercial agricultural enterprises.

Overall, DFA dollar resources is \$29 million in support of CAP Project objectives. Allocation of around \$21 million to Intermediate Credit Institutions (ICIs) for imports will result in the generation of local currency. The dollars will be made available by established banks to importers wishing to import items which will support agricultural production and processing, road rehabilitation and maintenance, or other kinds of inputs needed to promote commercial agricultural production.<sup>11</sup> The local currency generations will be programmed in support of specific Project-related activities.

In the following sections, the rationale for selecting each of these areas of activity and the way that the Project will support these activities is outlined.<sup>12</sup> While it was not always possible, given the availability of information, to select a "best" implementation option, two or more options are identified for further analysis during PP preparation.

#### 1. Support to Agribusiness Entrepreneurs and Producer Associations

The CAP project will reach out to commodity sub-sector agribusinesses that want to expand marketing and that are willing to work with or are already working with producer associations ready to expand production of the marketable crops. The conduit of most assistance for producers will be through agribusinesses.

For purposes of this Project, the definition of agribusiness is those enterprises engaged in agricultural marketing -- being defined as private operations which add value to an agricultural product through delivery of inputs to producers or processors, collection and transformation of the product, or trading operations.

There are already a number of mainly vertically-integrated agribusinesses in Madagascar who provide farmers with a complete range of production support services (improved seeds, advice, training, and other inputs), either purchase the crop themselves or arrange for its sale, and process the output either for the local market or for export. They provide excellent case studies, illustrating clearly how such operations might provide a viable channel for agricultural innovation and support services at the same time. A focus on these agribusiness firms, no matter at what level in the vertical marketing system they may be operating, that are

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<sup>11</sup> The ICI modality is described in Handbook 1B, Chapter 19.

<sup>12</sup> The more detailed background analyses which led to the various choices are found in Annex B.

working directly with producers will be a sustainable and cost-effective means to not only increase production but also to increase marketed production and trade.

While the formal, vertically-integrated and commodity sub-sector agribusinesses will be the key conduit for increasing commercial agricultural production under the Project, the Project will also encourage innovative approaches to support existing or nascent producer associations directly in order to offer opportunities to an increased proportion of the 600,000 rural households currently producing principally for their own consumption. However, the five-year CAP project will not be an institutional support project but instead will try to be a catalyst for existing organizations, both agribusinesses and producer associations, to further work together and expand markets and production.

Technical assistance, advisory services, training and marketing information services and other inputs to be designed in the project paper will be provided by a U.S. institution experienced in supporting agribusinesses with direct links to producers. The Project will encourage the U.S. institution to work in partnership with one or more related Malagasy non-governmental organizations (NGOs).

## 2. Supply of Needed Inputs and Commodities

The CAP Project will help to ensure the availability of foreign exchange for the import of agricultural and road-building and maintenance equipment and agricultural inputs such as fertilizer. Such equipment and production inputs are needed to increase productivity at the farm level and reduce the costs of marketing output throughout the country. At the same time, project support will also be extended to the national Seed Multiplication System to assure that high-quality seeds, a critical input in improving agricultural production, are more widely available locally.

### a. Input Supply Fund

There is currently a serious lack of foreign exchange in Madagascar. Export earnings declined in 1990 and 1991 and the current account deficit grew. The open general licensing (OGL) system for free and competitive allocation of foreign exchange for imports was suspended in October, 1991. Since that time, export earnings have been managed jointly by the Central Bank and the various commercial banks. Sixty percent of foreign exchange deposits by banks' clientele are retained by the banks themselves for their clients' use and 40 percent are remitted to the Central Bank for its allocation (generally for strategic imports such as petroleum and for government use). While the IMF projects a recovery in the trade balance after 1994, foreign exchange reserves are now only adequate for two months of imports.<sup>13</sup>

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<sup>13</sup> IMF Madagascar - Staff Report for the Article IV Consultation. June 11, 1992. pp. 17 and 33. Imports are projected at something over \$300 million per year.

In this environment, banks are now reportedly unable to meet more than half of their foreign exchange requests and are using various methods for apportioning out a scarce resource. By making foreign exchange available to support imports important to the expansion of commercial agricultural production and marketing, the Project can help alleviate a key constraint. More detailed discussions with the various banks will be needed during the PP design to develop the most effective allocation approach.

Direct access to the Input Supply Fund by producer organizations and agricultural entrepreneurs (if such should seem useful) will be facilitated by the American and Malagasy institutions providing the support services already discussed.<sup>14</sup> Unless there is such facilitation, it is unlikely that new organizations and entrepreneurs will have access to such funds.

Dollars will be placed by the CAP Project in an Input Supply Fund in one or more established commercial banks, or Intermediate Credit Institutions (ICIs).<sup>15</sup> The ICIs will allocate the foreign exchange to their clientele on strictly commercial terms, the range of eligible imports will be limited to agricultural production equipment, agricultural inputs, agro-processing equipment, road repair and maintenance equipment and spare parts, telecommunications equipment, and agroindustrial equipment and spare parts. Increased commercialization of virtually all crops is likely to involve additional processing capacity. Since transport capacity is currently said to be adequate, it is unclear whether this is a priority sector in terms of the CAP Project purpose. Use of the Input Supply Fund will, to the extent possible, emphasize U.S. procurement.

b. Seed Input

Through the Seed Input component, the CAP Project will address the need to improve the quality and availability of seeds for smallholders and commercial producers of foodcrops in the HPZs of Mahajanga and Fianarantsoa. The supply response for major crops such as rice, maize, cotton, wheat, potatoes and horticultural crops is severely restricted by the absence and/or high cost of improved seed and planting material.<sup>16</sup> The CAP Project proposes to assist selected National Seed Centers in the production and quality control of seeds to support commercial agriculture in the two target high potential zones. Policy dialogue under a planned

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<sup>14</sup> There is an organization called SIFEM which provides similar support (with Caisse Centrale funding) to private entrepreneurs in all sectors. All four operational banks in Madagascar are shareholders in this organization. The experience of SIFEM will be closely examined as a potential model for the agribusiness side of the proposed PVO/NGO support activity.

<sup>15</sup> The recently privatized national industrial bank (formerly the BNI but now also called Credit Lyonnais after its major shareholder), the private commercial bank Banque Malgache de l'Océan Indien (BMOI), and/or the newest commercial bank, the Union Commercial Bank.

<sup>16</sup> République Démocratique de Madagascar: Rapport de Préparation, Plan National Semencier, 1989.

Title III Program will support the Ministry of Agriculture in transforming its existing Seed Multiplication Centers into autonomous, self-financing (but still public sector) enterprises which will provide the improved, non-hybrid seeds upon which Madagascar's agriculture depends: rice, tubers, and some horticultural crops.

There are currently 22 National Seed Multiplication Centers producing various types of certified seeds for the different agro-climatic zones and food crop requirements in the country. Some centers are managed better than others, and are able to supply appropriate quantities of seed at prices which cover their production costs. This is particularly true for the rice seed multiplication center at Lac Alaotra. The CAP Project will work with four or five of the most efficiently operating and strategically located centers producing seed varieties which can support commercial agriculture production in the Mahajanga and Fianarantsoa zones. This could include assistance to two different rice seed centers - one producing rice seed for high altitude areas such as the Fianarantsoa seed farms, and one for low elevations such as the Manakara or Marovoay farms; one vegetable seed production center such as the one based in Antananarivo or Ambositra; and finally a fruit tree seed multiplication center in either Antsirabe or Ambositra.

The assistance to be provided under CAP would include essential production inputs supplied through the Input Supply Fund or imported directly such as breeder or multiplication seed, fertilizer, and seed processing equipment. Additional assistance could also include management training for seed farm managers, and short-term technical assistance in seed production.

The purpose of this assistance is to assure that quality seeds are available in sufficient supply, of the right type, at the time needed, and at affordable prices to promote the production of cash crops in the zones of Mahajanga and Fianarantsoa.

PID analyses revealed deficiencies of the seed production sector in general due to poor management, lack of resources, isolation from market forces in the agricultural sector and an uncertain future. Substantial investments have already been made by various donors in the seed sector.<sup>17</sup> The challenge is to define and execute an approach which maximizes these investments. Most of the problems cited by the World Bank and observed by the design team involve poor coordination within the Seed Multiplication Centers and between the Centers and FOFIFA, the national agricultural research system. The issue of the relationship between FOFIFA and the seed multiplication centers appears to require efforts more appropriate to other projects (e.g., the USAID-supported IRRI Project and the World Bank support to FOFIFA).

### 3. Road Rehabilitation and Maintenance

Through the Road Rehabilitation and Maintenance activity, the CAP Project will help to ensure that the physical barrier imposed by impassable roads

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<sup>17</sup> World Bank. Madagascar: Strategy for Agricultural Growth, Dec. 1991.

is lowered and that the costs of transport are reduced sufficiently to boost consumer demand for marketed agricultural production. The Road Rehabilitation and Maintenance activity will work on two separate tracks:

- first, the Project will provide recurrent cost financing to the Ministry of Public Works (MPW) to assure an estimated 2,700 km of rural road maintenance for the life of the project in the Mahajanga and Fianarantsoa HPZs<sup>18</sup>; and
- second, a limited amount of emergency road maintenance and repair financing will be made available to nongovernmental organizations in each region to enable them to work with communities and interested private sector organizations to undertake emergency repair and reconstruction activities which are important to agricultural marketing.

a. The Ministry of Public Works: A Regular Maintenance Program

It is envisioned that the MPW financing will be programmed as part of the regular recurrent cost budget of the Government of Madagascar. With World Bank assistance, the Government has, over the past three years, routinely issued rolling three-year Public Investment and Public Expenditure Programs. The Public Expenditure Program is currently being revised; however, it will be ready for discussion in December, 1992 and will be reviewed jointly by the Government and concerned donors, including USAID.

It is evident that, up to now, Government provisions for road maintenance have been virtually non-existent. The design team saw rural roads reconstructed just three years ago which are now almost impassable. There has been a reluctance to designate adequate amounts of revenues from certain taxes (such as the Petroleum Tax) for road maintenance. Local governments (at the provincial or district levels) seem to be unable to organize or finance even urgent local road repairs. There is no question that additional financing for rural road maintenance is needed to keep rural transport costs down and make increased agricultural trade feasible.

The October, 1991, Abt study of the rural marketing system in Madagascar<sup>19</sup> and a NORAD evaluation of rural road maintenance<sup>20</sup> provide examples of the high economic benefits of road maintenance.

The question of how best to support the Ministry in getting its repair and maintenance program on a sustainable footing, and preferably using labor-

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<sup>18</sup> This assumes that it requires 4 million FMG (or about \$2,000) to maintain one kilometer of rural road every two years.

<sup>19</sup>Abt, p. 31

<sup>20</sup> NORAD and the Ministry of Public Works. Project Review of the NORAD Financed Project MAD 003 Rehabilitation and Maintenance of Rural Roads by Labour Intensive Methods. August, 1990. p. 12

intensive maintenance techniques to increase rural employment (and reduce rural food insecurity), will be further examined during the next stage of design for the Project.

Two positive points for a change in the status quo are likely to emerge during the next several months. First, there will be a new, democratically-elected government; this government can be expected to be eager to restart the economic growth which has stalled during the 1991/92 period of governmental transition and to be more actively responsive to local demands for services and increased decentralization. Second, there has been a maturation in the process of budgetary management in the government. According to World Bank staff, there has been substantial progress to date (although there is still a way to go in terms of both consistency in presentation and in execution according to plan). This implies that the time may indeed be ripe for more active support of MPW's own budget planning and implementation processes.

b. Local NGO Leadership in Emergency Road Repair

The idea of providing emergency road repair funding for private nonprofit local groups interested in working with communities and private businesses in the area emerged in conversations with an NGO in the Mahajanga region, GO-MAN, and with the major private rice-processing firm in Marovoay, SORIMA. The conditions of rural roads and bridges are a major concern in this region as it has large, highly-productive agricultural operations in areas with a very flat topography criss-crossed by numerous rivers and creeks. A bridge wash-out, for example, can make product evacuation impossible. A fund for emergency repairs, such as temporary replacement of a bridge, is, according to our consultants, a logical solution to the problem.

While the mechanism by which such funding could be provided remain to be worked out, several options can be explored in further design work:

- a straight grant to a responsible local NGO such as GO-MAN for programming against specific criteria, with retrospective reporting;
- a matching grant program modelled on the Senegal Community Forestry project, in which there is an explicit link between the amount of Project financing and the amount which the communities and private businesses themselves contribute; or
- a reimbursable grant approach, in which the NGOs own resources are used to finance the work and the grant fund reimburses them upon evidence of successful execution.

4. Possible Component: Expanding Agricultural Lending

The lack of credit both for operating costs and investment is cited as a problem by all participants in the commodity marketing system in Madagascar: producers, intermediaries, and agribusinesses.

Financial services are currently provided only to a tiny fraction of producers, to a fairly limited "general clientele" of agricultural enterprises and exporters, and not at all to the small- to medium-scale agricultural traders. The World Bank's 1991 Rural Finance Sector Review notes that small scale rural enterprises and primary traders in agricultural products currently have no access to the bank credit system. However, producers' associations (although limited in number) are actively seeking better relationships with banks for both savings and credit services.

As alternatives to the current weak formal banking structure, three options are being tried in Madagascar. First, there is the external line of credit approach, in which an external financier assumes the high risks of lending perceived by the formal banking sector but attempts to reduce them by providing technical assistance to the borrower and/or by sharing the costs of loan supervision and/or by offering additional financing as a guarantee. Second, there is the cooperative savings-and-loan approach, in which the savers' funds are the only source of lending capital. This provides a more conservative expansion of actual financing capacity (as it depends entirely on savings) but is felt to develop more sustainable borrowing habits and to encourage credit discipline. There are even a few ongoing programs in Madagascar which combine these approaches and, at least so far, seem to be doing all right in reaping the advantages of each.<sup>21</sup> Third, several agribusiness firms are providing direct credit to producers for inputs and are being repaid once the produce is marketed.

However, the financial sector in Madagascar, especially the formal banking sector, is in poor shape. Support for agricultural credit is always difficult and A.I.D. does not have a good track record on agricultural credit in Africa. Also, the planned three components of CAP are already ambitious and a credit component only complicates the project further with unsure results.

Therefore, a separate component aimed at expanding lending for commercial agriculture is not currently part of the CAP Project. However, since credit and finance is a significant problem for increased trade, the PP design team will be tasked with analyzing the commercial agricultural lending sector and looking at whether and how A.I.D. assistance would make a significant impact. Assistance to expand commercial agricultural lending will only be accepted in the project if detailed analysis clearly shows implementation feasibility, impact, and necessity to meet project objectives. If assistance is found to be necessary and feasible, it will only be available through provision of project local currency generations. Finally, potential project assistance in this area will only be provided to agribusinesses and not to individual producers directly.

Also, since USAID/Madagascar is planning to expand its support for financial sector reforms at the level of the Central Bank and the Postal Savings Bank through an AEPRP proposal, these design assessments should be carried out in close coordination with any studies focussing on the more systemic sectoral issues involved in Madagascar.

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<sup>21</sup> See Annex B for a more complete discussion of who has been doing what and the relative successes and failures of these approaches.

## V. Implementation Considerations

### A. AID Support Requirements and Capabilities

USAID/Madagascar's new Office of Market and Business Development (MBD) will be responsible for the supervision and overall implementation of the CAP Project. One USDH agricultural specialist, with experience in agribusiness, is expected to be recruited by July 1993 and will be solely responsible for all Project management. The USDH Project Officer will be assisted by one FSN PSC to provide day-to-day Project management and to maintain contact with the U.S. contractor and host country institutions implementing the three Project components. In addition, the Mission's USDH Private Sector Officer will provide close support to the Project. Intermittent support from REDSOs commodity management and financial sector advisors should help the Mission Project management staff on more technical issues encountered.

The selection of a U.S. for-profit or non-profit institution who will be delegated substantial authority and responsibility for the implementation of the Project will be crucial. It is anticipated that the U.S. institution will provide leadership in meeting Project performance indicators in partnership with collaborating Malagasy organizations and firms. The Mission plans to use the Design and Performance approach whereby the selected contractor will be responsible to design and implement all project components, but in close coordination with Malagasy business groups, GOM and USAID officials.

### B. Food Needs and Title III

Title III commodity support will be a related and companion program, with its own policy agenda. The separate Title III proposal will use the basic analyses shown in this PID. The CAP Project is supportive of the Title III food security goals because:

- As already noted, food insecurity affects more Malagasy households than it should, given the agricultural potential and production capacity in the country. If the USAID/Madagascar program goal is broad-based sustainable economic growth, it cannot afford to ignore the overwhelming nature of the problem of the food insecurity which affects so many people;
- Successful implementation of the CAP Project as planned will provide increased opportunities to almost 200,000 rural households in the Fianarantsoa and Mahajanga regions to increase their incomes either through increased production of agricultural commodities for the market or through work on road maintenance. Among these rural households will be those who are the highly food-insecure at this time;
- The expected outcome of the CAP Project as a whole -- more crops marketed through inter-regional trade and at lower costs due to improvements in the road infrastructure -- will have a positive effect on the availability and costs of food supplies

required by food insecure urban households, particularly in Antananarivo; and

- It is anticipated that scarce foreign exchange will be allocated to the import of specific food commodities which Madagascar cannot, in the short term, produce -- unless alternative sources of financing for such imports are mobilized. USAID's Title III program is one such alternative source and it is proposed to use it. DFA resources will also be mobilized in the CAP Project to address hard currency financing needs for other imports in recognition of the importance of the foreign exchange constraint in improving economic growth prospects for Madagascar.

#### C. Local Currency Management

Overall AID policy on local currency management stresses the importance of clean accounting and good monitoring of the impact of local currency use. AID agreement with all donors in the context of the Special Program for Africa (SPA) emphasizes on-budget and rapid use of generated local currencies to prevent macroeconomic distortions. This guidance has been translated in the CAP Project design into:

- Programmed on-budget use of over 80 percent of local currency generations (through the Ministry of Public Works).
- Designation of regularly audited banks as managers of about 10-20 percent of the local currency generations which will be programmed off-budget for private sector beneficiaries. The local currency managed by the banks will be generated by the actions of the banks themselves through the sale of dollars.

USAID/Madagascar has a fairly good track record with local currency management but there have been problems: slow deposits of local currency counterpart generations into special accounts, poor monitoring of and reporting on FMG expenditures by the Ministry of Plan and Budget, and slow transfers of the local currency resources for agreed-upon uses to the implementing organizations.<sup>22</sup> Other donors have also experienced substantial delays in intra-Government transfers (e.g., for rural road rehabilitation) and in organizations which generated the local currency making deposits in a timely way (e.g., EEC food aid sales).

The GOM recently put forward new policies regarding use of LC generations at the urging of the donors, including USAID. The GOM wants to program and spend all LC generations the year in which they are generated. Also, the GOM would like to include all LC generations as just another source of revenue in their overall budget.

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<sup>22</sup> Project audits indicated areas of difficulty which the Mission has subsequently dealt with. See also Phillips et al regarding the management of the Title II, Section 206 and Food for Progress local currency generations.

The Project design must delineate a clear plan for all local currency generation and use consistent with A.I.D. and GOM regulations. Local currencies will be generated through the sale of dollars to importers under the Input Supply Fund and will be held in the ICIs which generated the sale of dollars. The project design must determine a process, within current A.I.D. requirements, whereby local currencies are transferred to agreed-upon on-budget uses within the GOM, such as through the Ministry of Public Works (MPW) for road rehabilitation and maintenance in the two HPZs. An agreement with the Ministry of Public Works for the uses of the LC generations must be part of the design process. Transferring the local currency intended for road reconstruction and repair to an account managed jointly by the Ministry of Public Works and the World Bank (as the leader of the Seventh Highway Program) might be one way of reducing USAID's management requirements. The World Bank has tentatively indicated that it may be open to accepting such a responsibility in the name of donor co-financing. The capacity of the MPW to utilize planned levels of local currencies must be demonstrated. Also, mechanisms must be developed for appropriate off-budget, private-sector use and management of LC generations and the GOM must agree to the use and management of those funds outside of government channels.

#### VI. Indicative Financial Plan: Estimated Costs and Methods of Financing

The five-year CAP Project will utilize the Development Fund for Africa (DFA) for an estimated \$29 million to support the implementation of the activities outlined above. Actual obligations will take place over a four-year period. Table 1 provides an indicative summary of the various project components and preliminary budget levels for both DFA and generated local currencies. Table 2 provides the indicative levels of local currency generations. These tables show an indicative four full years of implementation activities.

No dollar financing is to be provided to the Government of Madagascar or to regional NGOs for road repair and rehabilitation.

Local currency will be generated through the sale of the dollars in the ICI Input Supply activity. It is assumed that management of the Input Supply Fund will incur some costs; these are accounted for by using a lower exchange rate for purposes of estimating the local currency generations (1700 FMG/\$). The dollar equivalent of the local currency generated is, therefore, less than the sum of the DFA dollars.

Host country contributions to the project will include both private and public sector contributions. Private sector contributions will include the in-kind costs of staff time, facilities, transport, etc. that private sector firms and producer associations will contribute to overall project objectives. Public sector contributions will include similar in-kind costs of staff, facilities, transport and other costs for the road rehabilitation and maintenance activities, input supply program and seed farms. Most assistance will be provided to private agribusinesses, producer associations and input suppliers and their contributions to increasing commercial domestic trade will be the expected growing business activities.

At this point it is difficult to estimate the total host country contribution. The PP design team will carefully ascertain what can realistically be counted as host country contributions. If host country contributions do not equal 25 percent of total project cost, the Mission will request a waiver from the AA/AFR.

Table 1  
**COMMERCIAL AGRICULTURAL PROMOTION PROJECT**  
 Indicative Budget for Expenditure of Dollars and LC Generations

Area of CAP Project Assistance	Development Fund for Africa (DFA): (\$000)					Local Currency (LC) Generations: (Million FMG)				
	Year 1	Year 2	Year 3	Year 4	Total	Year 1	Year 2	Year 3	Year 4	Total
<b>I. Agribusiness/ association support</b>										
- U.S. Institution	\$1,350	\$1,400	\$1,200	\$1,200	\$5,150					
- Partner Agr/NGO Support	\$200	\$150	\$150	\$150	\$650	500	500	500	500	2,000
- Direct Support						1,000	1,000	1,000	1,000	4,000
<b>II. Comm. Ag. Input Supply</b>										
- Supply of Imports	\$6,000	\$5,200	\$5,000	\$5,000	\$21,200					
- Quality Seed Supply	\$200	\$100	\$100		\$400	200	300	100	0	600
<b>III. Road Maintenance</b>										
- TA Management	\$400	\$300	\$200	\$200	\$1,100					
- Min. of Public Works						7,900	6,440	6,300	6,400	27,040
- Emergency Road Repair						600	600	600	600	2,400
<b>IV. Project Support</b>										
- Evaluations		\$150		\$150	\$300					
- Audits	\$50	\$50	\$50	\$50	\$200					
<b>TOTAL</b>	<b>\$8,200</b>	<b>\$7,350</b>	<b>\$6,700</b>	<b>\$6,750</b>	<b>\$29,000</b>	<b>10,200</b>	<b>8,840</b>	<b>8,500</b>	<b>8,500</b>	<b>36,040</b>

Table 2  
**COMMERCIAL AGRICULTURAL PROMOTION PID**  
 Indicative Local Currency Generations Sources

Description	Year 1	Year 2	Year 3	Year 4	Total
Available Dollars: (\$000)					
Input Supply Fund:	\$6,000	\$5,200	\$5,000	\$5,000	\$21,200
<b>Generations: (Millions FMG)</b>					
From sales of \$ through Input Supply Fund	10,200	8,840	8,500	8,500	36,040

## VII. Design Issues Outstanding

### A. AID Policy Issues

#### 1. Buy America

USAID/Madagascar is committed to promote Buy America as part of this Project under the Input Supply Fund. However, it will be an uphill battle. Madagascar imports a substantial amount of agricultural and construction equipment from American companies. Madagascar is probably the only sub-Saharan African country in which virtually everybody knows the brands John Deere, Ford, and Caterpillar. Unfortunately, as the MARS program demonstrated, the European operations of these companies will be the logical source and origin for imports from these companies.

During the PP design, the contractor should identify U.S. suppliers of goods and equipment related to commercial agriculture demanded by Malagasy firms for the positive list of imports to be determined jointly with the design contractor and the GOM. The project will work with the Buy America office in A.I.D./Washington as much as possible and will look for a broad exposure of potential American goods on the positive list of approved types of imports. Buy America under this project will be a challenge but not a binding constraint.

#### 2. Local currency generations and role of GOM

The PID design team recommends that all foreign exchange used for the input supply fund and some generated local currency be managed directly by private banks without going through the central bank. However, any on-budget local currency uses, such as road rehabilitation and maintenance, will necessarily have to go through the central bank to the GOM. It is unclear to what extent the GOM will allow AID to use private banking channels for management of both FX and LC.

### B. Technical questions

#### 1. Regarding Support to Agribusinesses, Agricultural Entrepreneurs and Associations of Producers

- What are specific needs of agribusinesses and how best can the project support these needs?
- What is the best way to facilitate and support relationships between agribusinesses and producer associations?
- Are their obvious eligible Malagasy NGO partners in the agribusiness/cooperative development sector on a national level? On a regional level?
- Are any special guidelines necessary to ensure womens' membership and participation in agribusinesses and related producer associations?

## 2. Regarding Input Supply

- What should be on the positive list for the Intermediate Credit Institution-managed Input Supply Fund? Should there be any other criteria applied to individuals' and firms' applications for foreign exchange?
- How should the dollars be allocated to the ICIs?
- What will "American source/origin preference" mean in practice?

## 3. Regarding Road Rehabilitation and Maintenance

- Is the Ministry of Public Works committed to regular budgeting and allocation of resources for rural road maintenance?
- Are there ways to improve the MPW capacity to contract with private companies for labor-intensive road maintenance?
- Coordination with other donor activities.
- Is there adequate legal recourse or regulatory control to enforce contract and performance requirements?
- What is the capacity of the private sector (the small- to medium enterprises in particular) to take on the labor-intensive road maintenance programs in each region?

VIII. Design StrategyA. Project Paper Design

AFR/W and USAID/Madagascar agreed on the goals and strategic objectives of the AID program in Madagascar during the CPSP review held in Washington in September 1992. The Africa bureau also agreed in the reporting cable and subsequent contract signed with the Mission that the review and approval of both the CAP PID and PP would be at the Mission. Therefore, following approval of this PID at USAID/Madagascar, the Mission will:

- finalize the scope of work for the design-and-performance (DAP) contract to be carried out by a U.S. institution with significant expertise in agribusiness development and the ability to sub-contract with relevant U.S. institutions, especially Gray Amendment firms, to carry out all project components (December 1992);
- prepare and issue a Request for Proposals based upon the PID and detailed scope of work (January 1993);
- hold a pre-proposal conference in Madagascar (February 1993);

- select the U.S. organization/firm (May, 1993) with the idea of having a preliminary design mission launched by the contractor in June 1, 1993;
- deepen the analyses underlying the Title III commodity selection and programming and submit it, in a separate document, to AFR/W for review (Summer, 1993) and the FY 94 call-forward;
- prior to the arrival of the DAP contractor design team, USAID will further develop the Mission's information base regarding: the Seventh Highway project execution; other donor plans in specific areas of action and in the regions of Mahajanga and Fianarantsoa; the socio-economic dynamics of populations in the Mahajanga and Fianarantsoa regions; and,
- carry out the IEE.

The DAP contractor will provide five technical experts for the PP design; an agribusiness advisor who will be team leader, agricultural economist, financial sector advisor, seed specialist and road rehabilitation specialist. In addition, the contractor will provide a design specialist to assure that the PP is well-conceived and well-written according to A.I.D. requirements and help coordinate liaison with USAID, Malagasy organizations, and the GOM. It will be imperative that the design team works closely with all concerned government Ministries, private sector firms, banks, and producer associations.

Consistent with Mission Policies, the Program Development and Assessment Office (PDA) will be responsible for the development of the PP and will supervise the DAP contractor. The MBD office will provide close technical and overall design oversight. While maintaining overall supervision and approval authority, USAID officials will work closely with the contractors as collaborative partners along with Malagasy colleagues in the design consistent with the overall DAP approach.

Also, coordination with the other donors and NGOs providing development assistance will be important throughout the design period. There are other donors (either bilateral or private NGO organizations) involved in nearly every area in which this CAP Project will focus. Coordination will be particularly important with those involved in the road sector.

The PP should be completed by September-October, 1993 with a planned obligation date of November 1993. Under DAP, the contract amendment for implementation should be signed soon thereafter (assuming USAID/Madagascar approves based on contractor performance) and implementation should begin by January 1994.

#### B. Choice of design approach

The design and performance modality seems particularly appropriate for this fairly large and complicated project, in which a U.S. institution will be involved because the successful implementation of these activities will depend upon a realistic appraisal of what can be done within the Project

timeframe and upon the inter-personal relationships which the U.S. contractor can develop with Malagasy NGOs, agribusiness entrepreneurs, and banks.

The Project must provide a catalyst and promote the development of business relationships between commodity sub-sector agribusinesses and traders and as many producers' associations as possible in the shortest time possible so as to affect the most people possible. Experience of others, however, would indicate that the number of agribusinesses are small but growing, and that the human resource development process is labor-intensive and hard to rush. An over-ambitious design could simply raise expectations and frustrations and would not result in sustainable commercial agricultural production and marketing as envisioned. Involvement of the implementing U.S. institution is, therefore, likely to be pretty realistic about what can be accomplished, especially when its own organizational start-up time is factored in.

Good interpersonal relationships will also be critical to smooth -- and effective -- Project implementation. If it is clear that a particular U.S. institution's style simply doesn't work in Madagascar (or the people that the contractor is prepared to assign do not promise to develop the kind of teamwork envisioned), then it is easier to change horses in the design phase before the commitment to implementation is totally nailed down.

Finally, since this is not an institutional development project and will work mainly with the private sector, it should be easier to develop clear performance standards for the project for which to hold the contractor responsible. This relatively short-term, growth oriented project is performance based, and the contractor's work should also be performance based.

#### IX. Recommended Environmental Threshold Decision

The CAP Project will have certain impacts on the environment. It will: encourage more intensive agricultural production in already-cultivated areas with specific, if different, environmental concerns; permit migrant-producers and traders better access to under-developed areas and therefore increase overall land use for agricultural cultivation; encourage the introduction of new commercial crops, the seeds for which may be imported from outside of Madagascar and thus may, if quarantine and screening are not adequate, introduce new diseases; and promote greater use of motorized vehicles and mechanical equipment and thus the capacity for air pollution.

On the other hand, greater incomes from production for markets should permit rural growers' to increase their investments in inputs and techniques which would stabilize soil fertility and reduce degradation. By focussing on road maintenance rather than road expansion, no completely new areas will be opened up for exploitation. The Government of Madagascar is serious about its plant life and does operate a Plant Quarantine Service for which technical assistance is currently being provided by the FAO. In the opinion of the expert currently in-country, the Service does an adequate job of preventing the introduction of harmful pests. And, given

the overall level of resources to be provided for machinery and spare parts, any increase in pollution attributable to this equipment is likely to be negligible.

Further analysis of the environmental impact of the agricultural intensification and possible extensification will be conducted during the PP design. The report with a recommendation for the environmental examination will be submitted by cable to the Africa Bureau Environmental Officer and the Regional Legal Advisor well before the finalization of the PP.

**ANNEX A  
MADAGASCAR – Preliminary Project Logframe**

	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
<b>GOAL</b>			
Increased private investment and employment in commercial agriculture.	Expanded volume of domestic agricultural marketing activity, particularly of food crops  Increased number of agribusiness enterprises  Increased rural household incomes due to production for and participation in agricultural market activities	National statistics, Banque de Données de l'Etat  Rural income surveys  National reports (if available)  World Bank food security tracking studies	Macroeconomic management stays reasonable  Market liberalization is maintained  Natural disasters do not affect production unduly  Democratic transition goes smoothly  Legal, regulatory and juridicial framework for investment improved
<b>PURPOSE</b>			
To increase domestic trade in cash crops from the Fianarantsoa and Mahajanga high potential zones.	Increased domestic rice production and trade (Mahajanga in particular)  Increased production and sale of off-season crops (Fianarantsoa in particular)	Regional data (national Banque de Données)  Monitoring surveys carried out by USAID and implementing contractor	Selected regions have adequate resources to respond positively  Irrigation infrastructure rehabilitation is not a binding constraint

**ANNEX A  
MADAGASCAR – Preliminary Project Logframe**

	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
	<p>Greater volumes of agricultural trade (particularly where rural road maintenance has occurred)</p> <p>Lower prices for transport of commodities (where road maintenance has occurred)</p> <p>Increased number of market participants (in areas where road maintenance has occurred)</p>	<p>Price surveys, national trade and price data</p> <p>Farmer reports Association reports</p>	<p>Local capacity for market infrastructure and sustainable maintenance improves corresponding to production increases</p> <p>Seed availability permits increased production response</p> <p>7th Highway Program continues as envisioned</p> <p>Petroleum prices do not increase by more than 30 percent</p>
<p><b>OUTPUTS</b></p> <p>(1) Strengthened agribusinesses and linkages to associations of producers</p>	<p>At least _____ farmers benefitting as members of functioning producers' associations by receiving technical advice and inputs, and marketing products through agribusiness subsector firms.</p>	<p>PVO Reporting</p> <p>Ministry of Interior data on NGO registration (but non lucratif)</p>	<p>Ministry of Interior continues to register NGOs and farmers associations without long delays</p>

**ANNEX A  
MADAGASCAR – Preliminary Project Logframe**

	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
	At least ___ agribusiness firms by working with producers' associations have increased purchases of crops by ____%		Business climate does not get any worse than it is in 1992
	At least _____ people have directly participated in project-related training activities	Reports by implementing contractor	PVO can mobilize efficient training resources as expected
(2) Increased and more timely input supply	Intermediate Credit Institutions have provided private sector businesses access to available foreign exchange for imports relating to commercial agricultural production	Bank reports	Central Bank and GOM agree to modality of foreign exchange allocation through ICIs  OGL is re-established with enough lead time to permit adjustment of approach
	At least ___ percent of the value of imports is from the U.S.	Bank reports USAID monitoring system	U.S. prices for products and transportation are not 20 percent more than competitors' prices  U.S. products can do the job

**ANNEX A**  
**MADAGASCAR – Preliminary Project Logframe**

	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
	Tonnage of locally–produced high–quality seed sold has increased	Seed farm reports	Analyses will show that self–financing seed farms are possible (and that contingency funds can be built into the public recurrent budget to cover gaps)
(3) Improved road maintenance and repair	At least 1,000 km of rural roads receive routine maintenance throughout the period	Contractor monitoring reports Ministry of Public Works reports	That a regular program can be established within the MPW program
	High intensity approaches create _____ jobs for food–insecure rural households every dry season	World Bank reports	That the HIMO approach continues to work well enough to merit the extra effort of training and supervision involved
	Costs of transport are reduced by a minimum of 30 percent for key commodities (per ton–km)	Rural surveys	
	_____ repairs per month made to damaged transport infrastructure organized by local NGOs	Price data	

**ANNEX A  
MADAGASCAR – Preliminary Project Logframe**

	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
(4) Agricultural lending expanded (If included in final PP)	Banks provide financing for at least 15 projects proposed by producers' associations	Bank reports  PVO reports	That the business proposals are financially attractive
	Repayment rate is 90 percent or better	Bank reports	
	Banks provide funding for at least 5 agribusiness proposals (developed with project support)	Bank reports	
	Percentage of bank portfolio lending for investments related to commercial agriculture increase as percentage of total portfolios	Central Bank reports	
<b>INPUTS</b>			
U.S. Institution to provide leadership to Project and implement all project activities	Contract (developed through Design and Performance modality). Direct \$ financing for activities		AID/W approves this DAP application  US PVOs are interested  Local NGOs as potential partners can be found

**ANNEX A**  
**MADAGASCAR – Preliminary Project Logframe**

Objectively Verifiable Indicators	Means of Verification	Assumptions
One or more Malagasy NGOs or private firms to provide on-the-ground leadership in business advisory services, marketing and cooperative development	Agreements with Contractor.	
Foreign exchange for positive list of imports	\$ _____ million over four years	
Seed farm upgrading, studies, training	_____ million FMG	
Agreement with World Bank and Ministry of Public Works for road maintenance program management	_____ billion FMG over four years	
Agreement with local NGOs in Mahajanga and Fianarantsoa for emergency road repair	_____ billion FMG over four years	

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ANNEX B

## FACTORS AFFECTING PROJECT SELECTION AND FURTHER DEVELOPMENT

I. IntroductionA. A Few Generalizations about Markets

Developing a market system involves production of marketable commodities with characteristics desired by buyers, either directly (as in the production of carrots) or through some process of transformation (sugarcane into sugar, wheat into bread, etc.). The people involved in the production process are referred to in this paper variously as producers, farmers, agricultural entrepreneurs, and agribusiness entrepreneurs. Markets also involve intermediaries, people who transfer the product physically from production point to transformation point to ultimate buyer/consumer. The Abt paper does a good job of describing intermediaries in Madagascar: collecteurs, sous-collecteurs, grossistes, etc. Consumption is, of course, critical to the operation of markets. It is consumers' purchasing power, preferences, and location which define the size, content, and direction of markets.

Markets are run by rules and regulations, generally both written and unwritten. Government policies are often seen as the principal regulators of markets, determining whether markets shall operate on the basis of fixed or free prices, on what days, and in what locations. In 1985/86, the Government of Madagascar rewrote the rules on commodity pricing and on who could trade in which goods -- the so-called liberalization of the Madagascar agricultural markets. The Government is continuing to revise the rules by actually selling off state-owned intermediary companies (COROI, SOMACODIS, etc.) which formerly had monopolies in certain elements of the agricultural trade but have continued to operate as competitors in the liberalized environment. Government regulations and interventions in certain areas of commercialized production, however, remain important; overall macroeconomic decisions regarding the exchange rate, revenue policies, and the size of the money supply strongly influence investors' decisions both in production and in intermediary operations.

Rules are also written by other market participants. For example, the banks which provide the financing for market operations have rules to which potential borrowers, that is, people who might wish to engage in production, transformation, and sales processes with the help of some bank financing, must pay attention. Consumers often express their "rules" through their purchasing behavior, determining, for example, the level of processing desired or the kind of packaging which will entice them to buy in a freely-functioning market.

Free markets which operate in response to supply and demand factors encourage economic specialization. The concept of comparative advantage provides a way of assessing what kind of specialization in production and market operation will be the most efficient for an economy as a whole or for farmers and entrepreneurs in specific places. Analysts can calculate the domestic resource costs for a particular commodity produced and judge whether or not it is likely that this commodity can be competitively priced (and therefore attractive to consumers) compared to one which is imported.

In the end, specialization of production, processing, and marketing operations tends to be associated with greater monetization in an economy (at the household level as well as at the national level) and with greater diversity in the average consumption bundle. Both of these characteristics are often taken as indicators of "economic development" and, therefore, market-induced specialization is thought to be good. Increased production of agricultural commodities for the market combined with efficient operation of markets in general also promises higher levels of productivity for human, natural, and financial resources and greater reliability in supplies of agricultural commodities (that is, improved food security) for people not producing them.

Rural producing households obviously have an interest in improved opportunities for marketable production if they have the natural and financial resources needed to permit them to increase the overall productivity (income) of their household labor. Intermediaries obviously benefit by having expanded working opportunities in handling a larger volume of goods. Urban households, for example, benefit from commercial agricultural production and marketing developments if such developments result in: needed food supplies being produced where they can be grown at least cost; their transfer at least cost by the most appropriate and efficient means of transport; and their being processed or stored in such a way as to assure year-round access.

#### **B. The Purpose of this Annex**

In order to examine whether these theoretical benefits could be realized if USAID were to invest just under \$30 million in resources in support of actions which would improve the environment for increased commercial agricultural production (as USAID/Madagascar had hypothesized in a draft New Project Description), the design team first considered constraints which affect the agricultural production, transformation, and trade sectors in Madagascar, particularly in the two regions of the country selected by the Mission as "high potential zones (HPZs)". We evaluated these constraints with regard to their importance, in the current context of Madagascar, in inhibiting a short- to medium-term increase in commercial agricultural production. We then turned these constraints around to look at them as opportunities for USAID assistance -- what USAID/Madagascar might usefully support in order to promote more commercial agricultural production and marketing.

This was fundamentally a horseback analysis. We rode rapidly through the economic and project literature on Madagascar (especially the AIRD analysis done for the World Bank on regional specialization and comparative advantage and the Dorosh et al. comparative analysis of the relative income and employment impacts of investing in rice or coffee production) and talked with representatives of the public sector, private businesses, the banking community, the PVO community, and other donors. We pulled together a very notional database on relative costs and returns, and combining this information with the USAID/Madagascar budget constraint, we identified five potential constraint-alleviating "areas for investment" which seem to be necessary for improving the prospects for commercial agricultural production and marketing. We then applied the Mission's management constraint and selected those areas for intervention which would:

- contribute to increased volumes of marketed agricultural output in the relatively short term (three to five years), particularly in the two "HPZs";
- be consistent with the assessment of regional comparative advantage made by AIRD as well as the Mission's understanding of production prospects in the two zones;
- involve as many rural households in Project-related activity as possible, either through production, marketing, or construction activities; and
- engage the formal private sector to the maximum extent possible in the implementation of Project activities.

This implies that the Government of Madagascar's role will, by and large, be one of policy leadership and overall economic management rather than direct Project implementation.

In this Annex, discussions of the economic, technical, and institutional factors which were considered in this PID design phase are presented to: provide more solid support for the choices made; record the assumptions which are critical to project achievement; and note some of the issues which must be addressed in the Project Paper preparation. Some of the alternatives also considered -- but rejected as potential Project interventions -- emerge from these discussions. More importantly, this Annex gives a more concrete idea of the costs and benefits of the activities identified as well as the risks which must be managed.

## II. Economic, Technical, and Social/Institutional Factors

### A. Economic Considerations

The agricultural production potential of Madagascar is almost the stuff of legend. With its unique flora and fauna, wide variety of agro-climatic zones, generally reliable rainfall, history of surplus agricultural production for export, and, particularly, its dominance of the exotic world spice markets, Madagascar's agricultural outlook is often assumed to be limitless. The rapid response of rice production to market liberalization in the mid-1980s seemed to confirm the idea that agricultural growth would be easily regained once the constraining policies which had resulted in a downturn in agricultural productivity from 1975 - 1985 had been removed.

Reality intruded soon after. The markets for Madagascar's traditional exports turned soft, little progress was made in halting the increasing degradation of soil and water resources experienced in recent decades, the size of farms continued to shrink with continuing population growth, the very poor rural population exhibited a low tolerance for financial risk and yield-increasing investments were not made, and all farming enterprises continued to face the high possibility of financial ruin associated with increasing banditry, periodic cyclones and droughts, and market failures.<sup>1</sup>

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<sup>1</sup> Basic numbers quantifying these phenomena are found in Annex E.

The economic health of Madagascar's agriculture is, therefore, currently faltering seriously. Given the importance of agricultural productivity and income to Madagascar's national economic growth as well as to the welfare of individual Malagasy, an emphasis on restoring the sector to health is an obvious emphasis for any donor.

USAID/Madagascar's own analysis of this situation is laid out in general terms in its Country Program Strategic Plan (CPSP). The approach selected, which emphasizes the expanded operation and efficiency of markets, particularly agricultural markets, positions the Mission at the very heart of the agricultural growth dynamic in Madagascar today. Promoting commercial agricultural production through the project intervention proposed here was intended to enable USAID/Madagascar "to [help] accelerate the production and flow of surplus agricultural commodities from selected high potential zones and to improve market efficiency."<sup>2</sup>

Recent history clearly demonstrates that simply increasing households' production for their own consumption is not enough. More than a quarter of the Malagasy population lives in cities and is, almost by definition, dependent on markets for its food supply. In addition, given the constraints on overall land availability, about half of the rural population does not have adequate farm resources, using current technology and inputs, to be completely food self-sufficient<sup>3</sup> -- in part because they do not have access to productivity-enhancing inputs and cannot get any high-value crops they might be capable of producing to markets. To meet the food needs of both urban populations and the food-deficient rural households, more efficient and more active markets for agricultural production are essential.

The analysis here details more clearly how this can come about with USAID support in the form of commodities, financing, and technical assistance and what the impact of the effort might be.

#### 1. Rationale for Focussing on Non-Price Constraints

Development of the project approach described in Section IV of the PID resulted from the systematic examination of the non-price factors which affect commercial agricultural production in Madagascar and the operation of the markets for various agricultural commodities. The decision to focus on non-price factors stemmed from market analyses conducted by Berg and Abt in recent years as well as from the views expressed often during interviews: the markets for agricultural commodities remain liberalized, prices are responsive to supply and demand if there are no other barriers to trade, and, even with the political changes in progress, the Government of Madagascar will remain committed to market-determined pricing for agricultural commodities. Thus, there was a justification for emphasizing the "other" constraints to expanded commercial agricultural production and marketing.

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<sup>2</sup> CPSP, p. 47

<sup>3</sup> World Bank Madagascar: Towards a Food Security and Nutrition Strategy. June, 1990.

Included in the list of "other" constraints were:

- production infrastructure;
- public sector support services (research, extension);
- transportation infrastructure;
- communications infrastructure and market information; and
- financial services.

The need for a renewed effort to resolve the "other" constraints to increasing farm incomes and agricultural productivity by facilitating commercial agricultural production is clear. However, even a rapid examination of the constraints listed indicates both the complexity of the task in organizational terms and the magnitudes of the investments needed to alleviate these constraints. Those constraints whose alleviation seem to be more of an "economic" character are reviewed in this section; those which are more "technical" are discussed in the next section.

## 2. "Other" Constraints

### a. Production infrastructure

Rice is the predominant crop grown in Madagascar, accounting for about a third of the total value of all agricultural output. 1.2 million hectares (almost 70 percent of all cultivated land) is devoted to its production; the next most important crops in terms of area are cassava (approximately 300,000 ha) and coffee (about 225,000 ha).<sup>4</sup> Most rice is grown with some form of irrigation. Irrigation systems are classified in different ways. Generally, however, they fall into three groups: those which are privately-developed, modest in size, and provide minimal water control -- often referred to as "family" or "traditional" systems; those which are developed with external assistance, are larger in size, and have a greater level of water control -- these are called "small" or "medium" perimeters; and those which have benefitted from substantial amounts of public investment and include thousands of hectares -- "large" perimeters. About 40 percent of the hectarage planted to rice is in "traditional" systems. They are relatively small in size (10 to 250 ha) and with varying degrees of water control. About 10 percent (113,000 ha) is in five large perimeters, the largest of which are the Lac Alaotra and FIFABE (Marovoay Plain) systems.

Madagascar in general has an unusual (compared to Africa) amount of irrigated land; some 50 percent of all cultivated land is irrigated and some 80 percent of potentially irrigable land is already being used.<sup>5</sup> In addition to rice, cotton, tobacco, peas, and sugarcane are grown under irrigation. Wheat and vegetables can be, and are, grown on irrigated rice fields in the off-season but occupy only a small fraction of the total area developed.

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<sup>4</sup> World Bank. Madagascar: Strategy for Agricultural Growth, Dec. 1991, p.2 and République Démocratique de Madagascar Développement Humain et Identification des Zones Prioritaires d'Intervention, juillet, 1991, p. 110.

<sup>5</sup> World Bank. Madagascar: Strategy for Agricultural Growth, p. 2.

Irrigation development has been ongoing for several hundred years in many highland valleys, but new irrigated development in the fertile inland (baibo) areas of the Northwest (Mahajanga) region and in the Mangoky area of the west hold out the promise of classic expansion zones. However, the areas identified as having substantial potential for expanded irrigation investments (as in the Northwest) are not currently served by passable roads.

Established production infrastructure for irrigated production needs upgrading and expansion virtually everywhere. While the emphasis of the Government in the late 1970s and early 1980s was on industrial development (resulting in the famous four-cars-per-year auto manufacturing plant cited in the CPS), public investments in major water control structures and in maintenance of the large irrigation systems (Marovoay Plain and Lac Alaotra) was minimal. Partly as a result of this, double-cropping on irrigated land is not common. Average yields of rice on even the most highly-developed irrigated perimeters are typically below 3 tons/ha/year. Few inputs (improved seed and fertilizer) are used for irrigated rice production as the yield levels do not justify the costs.<sup>6</sup>

Improved irrigation infrastructure is, therefore, an apparent means for breaking the vicious circle of low rice productivity, inadequate rice output (necessitating rice imports for urban consumption needs), and low farm incomes from the major crop produced in Madagascar. It would also facilitate more widespread production of second crops, increasing the intensity of use for one of Madagascar's increasingly scarce resources -- irrigable land.<sup>7</sup>

The most recent and complete study of the economics of irrigation in Madagascar was conducted by an AIRD team in June, 1990.<sup>8</sup> In general, the team concluded: that Madagascar can produce rice for its own consumption economically (compared to imports) but, with a couple of exceptions, is not competitive in an export market; rehabilitation of existing irrigation systems is more financially and economically feasible than establishing new ones (particularly large ones which require substantial public investment); intensification of production (using improved technologies for rice and increasing the intensity of land use by double-cropping, not necessarily rice alone) is important for maximizing both financial and economic returns to rehabilitation of irrigation infrastructure; and that different strategies for expanding production make sense in different areas. Irrigated rice production everywhere but FIFABE and SAMANGOKY showed positive economic and financial returns (net present value of returns

discounted at 15 percent greater than costs). These two systems showed

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<sup>6</sup> Price Waterhouse, 1989

<sup>7</sup> Even though there are still areas which are underdeveloped, population growth at 3 or 3.2 percent a year is quickly reducing the room for expansion.

<sup>8</sup> Associates for International Resources and Development (AIRD) Etude du Secteur Irrigué, Etude de l'Economie de l'Irrigation. Rapport Provisoire, juin, 1991.

negative rates of return due to high public investment costs which were not justified by yields.

Discussions with the AGRAR technical director in Mahajanga indicated that the assumptions made and conclusions drawn in the AIRD analysis were by and large true. AGRAR now sees its own investments in the FIFABE perimeter as having been important in maintaining productivity and incomes in the Marovoay Plain but as insufficient to boost productivity overall. A net increase in productivity requires investments which go well beyond the field level structures (canals and drains) on which the AGRAR program has focussed. Improved productivity also requires substantial upstream inputs into dams and other major water control structures, pumps for moving water around, and annual rehabilitation (particularly where the dams are insufficient to permit entire perimeters from being submerged in an annual flood). Further, it was essential that complementary investments in annual production inputs were made to ensure that yields could increase to an average of five or more tons per hectare for such investments to be profitable. This magnitude of yield increase is not seen by those knowledgeable with rice production as impossible but it implies a certain amount of producer household investment in additional labor and inputs.

Should USAID consider focussing its investments on improving irrigation infrastructure and on facilitating farm-level investment in complementary inputs? Since rice is the principal crop marketed within Madagascar, increased rice production would certainly lead to increased sales of surplus rice as well as to improved consumption and food security on-farm. Since rice is produced so widely, an investment in this area would, it might be argued, have the broadest possible impact on rural households' incomes. Further, USAID has some experience in rice production, having supported the testing and extension of improved rice varieties by financing IRRI technical assistance to the national agricultural research organization, FOFIFA.

Attractive as this option might be, there are several reasons to recommend that USAID not propose to adopt it. Among the most important are: other donor involvement on those major perimeters where a relatively important impact might be made in the short term; the time commitment that would be needed to make measurable progress toward a significant impact on irrigation infrastructure; and our assessment that a more producer-based approach to infrastructure rehabilitation would be more effective in the long run.

Germany (the KFW) and the African Development Bank (ADB) are already providing technical and financial assistance in the arduous process of upgrading infrastructure in the 18,000 ha. Marovoay Plain. KFW has been supporting the rehabilitation of the primary and secondary canal systems in Marovoay since 1982 and is currently on the point of considering whether to extend their commitment. The assessment of progress to date has been that the basic rehabilitation has been satisfactorily done, but that substantial additional investment is needed for the tertiary canal system, on the replacement of pumping equipment, and the installation of a maintenance system for the rehabilitated works. The ADB involvement, just getting underway, will provide financing for raising the levels of two dams on rivers feeding water into the system; siltation has reduced their

effectiveness. To reduce the risks of flooding, the dams are being raised

a meter or two in height. French assistance has been long involved in the development of the Lac Alaotra area and continues.<sup>9</sup>

What is clear from the experience of donors supporting infrastructure development in these major perimeters is that the financial requirements are enormous and the time needed to carry out the work must be counted in decades rather than years. Using the figures in the AIRD report in a very crude analysis, rehabilitation costs alone could total anywhere between 100 and 150 billion FMG (\$90 to 170 million) between now and the year 2000. Given the relative size of the USAID program in Madagascar, any significant commitment would absorb virtually all of the program's resources. Given that infrastructure improvement and expansion must be accompanied by yield-enhancing measures if it is to pay off, it can be argued that a single focus on production infrastructure would be far from sufficient to achieve the objectives sought.

Finally, it is not at all clear that the large, government-developed perimeter approach seen in Lac Alaotra and the Marovoay Plain is the model which makes the most sense. For example, the private company CIM<sup>10</sup> in Mahajanga has constructed (over the past 35 years) its own irrigation facilities in the baibohe plain across the Betsiboka River from Marovoay. CIM operates the perimeters profitably and manages to maintain them with little assistance from the state (although the design team was asked for assistance in river dredging to prevent a flooding problem which has seriously affected them in recent years).

CIM is currently growing 956 ha of cotton, 450 ha of rice, 360 ha of tobacco, 80 ha of hybrid maize and 40 ha of peanuts on their land. They have experimented with safflower production, vegetables, and other crops and may expand production in some of these in the near future. Overall, CIM employs some 10,000 people, many of them on tobacco harvesting. They also work with "associated planters" who sell fresh green tobacco leaves to CIM. Many of the employees on tobacco are seasonal; some 1200 are recruited from Fianarantsoa after the upland rice harvest in that region. The migrant workers work for four months for CIM and then go back. CIM pays for their transport, food during the journey, and the required movement certificate; the migrant laborers receive wages for work and take care of their own accommodations.

The conclusion should not be drawn that the Government of Madagascar should simply sit back and wait for the CIMs of the country to take care of further irrigation development. But the CIM experience does suggest that it should not be automatically assumed that the Government must assume all responsibility for the installation and upkeep of production infrastructure. Rather, we concluded that what is needed is a public policy orientation and a support framework which encourages private producers to go as far as they can on their own in mobilizing resources for investment in production infrastructure.

b. Public sector support services

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<sup>9</sup> The Public Investment Program (PIP) for 1992 lists two projects in the Lac Alaotra area receiving support from the Caisse Centrale and French Cooperation (FAC).

<sup>10</sup> Cultures Industrielles Malgaches

Unfortunately, Madagascar's public sector production support services (research, seed production, extension) are presently judged to be inefficient and/or ineffective. It is widely accepted that the public services need to be almost entirely restructured. Meanwhile, many private agricultural entrepreneurs and donors have simply supplanted the public systems altogether -- raising some question as to whether the public sector support services deserve resuscitation. In the long run, the supplanting approach is probably highly inefficient in economic terms. But the short run financial savings to individuals and agricultural enterprises who can't afford to wait for public service delivery are obvious. They thus deserve a serious look.

The present proliferation of alternative (private or quasi-private) sources for agricultural production support services indicates that USAID/Madagascar could usefully underwrite any number of approaches which would probably increase producers' and agricultural entrepreneurs' access to needed inputs, technology, and knowledge in the short- to medium-term. The conclusion is almost unavoidable: most public sector organizational reforms would require substantially more resources than the CAP Project was prepared to provide and, further, that the impact on agricultural marketing would be long in coming.

Three of the more promising options which could have a visible effect on commercial agricultural production in the short to medium term were identified in the design interviews and field visits:

- support to agribusiness entrepreneurs, traders and groups of agricultural entrepreneurs working with producer associations and producers;
- development of independent producers' associations; and
- the "autonomization" of public institutions to permit them to act in a more private sector mode.

Based on discussions held by the design team, each of these options appears to provide a cost-effective alternative to reforming the public sector support service delivery system.

(1). Support to agribusiness entrepreneurs and traders

There are already a number of agribusinesses in Madagascar who provide farmers with a complete range of production support services (improved seeds, advice, training, and other inputs), either purchase the crop themselves or arrange for its sale, and process the output either for the local market or for export. They provide excellent case studies, illustrating clearly how such operations might provide a viable channel for agricultural innovation and support services at the same time.

One such private agribusiness company started in 1987 (post-liberalization) by trading in groundnuts for export. In 1988, coffee exports were added to the business to generate revenues, and efforts were made to improve the quality of groundnuts for exports (for confectionery purposes) through selection. More than 60 percent of the volume purchased from farmers in that year was rejected for export. The company decided to provide selected groundnut seeds to growers the next year to get the quality up and improve the market's profitability; this effort continues. In 1989, bean and maize

seed were added to the trade and contacts made with Pioneer South Africa for hybrid maize. With Pioneer's assistance, the company mounted some trials in the Mahajanga region in 1990.

The company has now expanded its hybrid maize operations and plans to specialize in hybrid maize seed production. In the company's view, hybrid maize has an unlimited market as animal feed. The company figures its emphasis on seed production should be a sustainable and profitable business -- once enough farmers become regular customers. Since hybrid maize is a new crop for Malagasy farmers, it is planned to develop farmer-producers and a farmer-clientele at the same time. So "student" farmers are brought to the company farm to cultivate hybrid maize in 10 ha plots for a one-year training period. The company organizes the marketing of the output by organizing contacts with buyers but does not buy the grain itself. The "student" producers thus can learn what it means to fulfill contracts and maintain quality themselves when they become hybrid seed buyers (clients for the company) the next year.

At this point, the "graduate" hybrid growers are not organized in a group. In the company manager's view, it takes at least three years for members to build up their individual capital enough to make a group work; it is also important to have good leadership. In addition, a hybrid buyer has to have a farm bigger than 1.5 ha. Lacking the group, the company now provides fertilizers as well as seeds to farmer-clients and charges farmers for them at the end of the season. Results so far are encouraging.

There are apparently a number of other agribusinesses in Madagascar either pursuing -- or thinking about pursuing -- a similar course of action. While most are private, KOBAMA, a parastatal entity receiving support from the European Economic Community (EEC) and the Caisse Centrale, has successfully introduced a major off-season crop, wheat, to small farmers in the highlands near Antsirabe. KOBAMA has the monopoly on large-scale wheat milling; AIRD analyses showed that off-season production of wheat on irrigated rice fields was financially attractive to farmers but is not competitive at world market prices. It is currently heavily protected by import controls and production is subsidized. However, this picture changes when yields are increased from the 1.2 MT or so per hectare to the 2.5 MT level. Then wheat production becomes economically interesting and requires less subsidization.

The introduction of wheat has shown promise, with some 4,000 small farmers engaged in wheat production in KOBAMA's best year (1990). But donor assistance continues to be needed to get the operation up to a scale at which it can be self-sustaining and the public investment contributions are not as reliable as they should be. KOBAMA, as a state-owned business, still depends on public budgetary support for its recurrent costs; any revenue shortfall leaves its production investments in a parlous state.

## (2). Development of Independent Producers' Associations

While the formal, vertically-integrated agribusinesses sound like an attractive means for introducing new crops and providing production support services to growers, it would not be possible that they could expand rapidly enough -- say, with additional financing or marketing information support or training/advisory services -- to offer real opportunities to a substantially increased proportion of the 600,000 rural households

currently producing principally for their own consumption.

Rather, it has been suggested that farmers themselves need to band together to be able to voice collectively their needs for information, inputs, and other kinds of support services. The model for this approach seems to be that of FIFATA, a structure of farmers' associations in the Antsirabe region both initiated by and supported by a consortium of local (TSIVOKA) and international (FERT) NGOs.

FIFATA's actions essentially supplant public sector services in some areas and successfully lobby for public services in others. The principal advantage of the producer association or cooperative approach from the government's and financial sector's point of view is that the organization of farmers in groups makes them easier to contact. Dealing with a group is, therefore, more cost-effective than dealing with individuals. However, the element of cooperative solidarity is also seen as a strong advantage by the financial community as group pressure replaces expensive staff fieldwork when it comes to collecting on credit. While BTM's group credit experiments have not always been successful, the track record has been no worse (and, in some cases, better) than that for lending to individual agribusinesses, for example.<sup>11</sup>

### (3). The "Privatization" of Public Organizations

The agribusiness and producer association approaches just described could be envisioned as useful options for providing or channeling producer support services in many spheres but, based on design analyses, are unlikely to work for a critical input into increased commercial rice production: high quality rice seed. Rice seed is open-pollinated and not an essential purchase for most farmers unless they have, for some reason, lost their own seed or want to upgrade the quality of the seed planted. This variable market demand does not make it easy to run a profitable business in rice seeds.

Moreover, given the dominance of rice in the Malagasy agricultural economy and diet, the Government is likely to want to keep its hand in the rice seed business to ensure that the supply of rice is, at the very least, not negatively affected by a shortage of seed.

A combined public/private approach thus seems desirable. It should be relatively less expensive for the Government budget (currently unable to reliably cover the recurrent costs for its present Seed Multiplication Centers) and, at the same time, provide more incentives for Seed Center managers to respond to farmers' demands. The technical specifics of this are discussed further below.

#### c. Transport infrastructure

While coming in third place in this presentation, all producers, traders, and agricultural entrepreneurs consulted agree: the condition of road transport in Madagascar is the single most serious economic constraint to efficient and expanded marketing of agricultural commodities. Better roads

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<sup>11</sup> World Bank. Rural Finance Sector Review.

would reduce costs of inputs at the producer end, increase the reach and profits of traders, and/or reduce prices for consumers -- thus boosting demand for commodities and farmers' incentives to increase volumes produced.

Anecdotal information on the cost reductions associated with improved road conditions and some recent information on the employment generation possibilities associated with labor-intensive road maintenance programs encouraged the design team to look hard at the possibility that USAID/Madagascar could best contribute to the achievement of the CAP Project objectives by going all out on road rehabilitation and maintenance within the zones of Mahajanga and Fianarantsoa and between them and their major markets.

The October, 1991, Abt study of the rural marketing system in Madagascar sums up the case very well: "competition is greater and transportation costs lower on major, well-maintained routes (e.g., 180 FMG per ton-km from Antananarivo to Tamatave versus 1,000 FMG per ton-km from Ambodiriana to Tamatave)...in certain regions bad roads are limiting competition and depressing farm-level prices. In some cases, producers are completely cut off from their markets...Isolated producers not only receive a lower price for their export crops, but pay a higher price for rice and face greater uncertainty than producers in regions where rural infrastructure is more adequate...".<sup>12</sup>

The NORAD evaluation of rural road maintenance provides further examples.<sup>13</sup> After repair of one section, the price for hauling commodities by ox-cart cost just half of the price charged before the repair: 3000 vs 1500 FMG. A cart of carrots was transported before the road maintenance was completed for 3500 FMG. When the repairs were done, a truck carried the same amount for 875 FMG. This change in transport mode reduced transport costs from 40 percent of the value of carrots to 10 percent of their value, leaving a bigger share for the small producer. The prices for consumer goods imported into the villages were also affected. Prior to the road repair, rice was available in Antsirabe for 490 FMG/kg but cost 650 FMG/kg in the village. Post-road, a kilo of rice cost 580 FMG in the village.

So the design team looked at the road situation. Madagascar has 50,000 km of roads, 40,000 of which are "rural roads." 15,000 km of the total network are considered to be "economic." Of the 40,000 km of rural roads in the network, only 10 percent are considered to be in "good" condition,

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<sup>12</sup>Abt, p. 31

<sup>13</sup> NORAD and the Ministry of Public Works. Project Review of the NORAD Financed Project MAD 003 Rehabilitation and Maintenance of Rural Roads by Labour Intensive Methods. August, 1990. p. 12

that is, passable year-round.<sup>14</sup> Rural road networks (all dirt) are very limited in extent and highly degraded. In large part, the poor state of the road network is due to the non-existence of a routine maintenance program. Only 500 km of rural roads receive recurrent maintenance in a year.<sup>15</sup> The reasons for lack of governmental attention to this crucial aspect of the road system are not entirely clear but seem to include: inadequate fiscal provisions for regular on-budget financing; poor organization of the Ministry of Public Works; an expectation that donors will provide for rural road maintenance; and difficult terrain (which drives up costs).

Donors have been working with the Government intensively since the mid-1980s to address the maintenance issue. Three approaches have been tried, separately and in combination: use of private mechanized contractors rather than MPW's own brigades to carry out the maintenance work; use of small- to medium-private contractors to do rehabilitation and maintenance work; and use of food-for-work (FFW) schemes to create employment as well as to maintain roads. HIMO (labor-intensive) techniques are well-known and widely used in combination with both the small- to medium-contractor and FFW approaches.

The NORAD-supported high intensity road maintenance program evaluation already cited also tested the feasibility of employing village men and women in road maintenance. Not only could trained teams of villagers do the work more cheaply than it could be done with mechanical equipment, they were eager for the hard work. However, the NORAD evaluation also pointed out the downsides of high-intensity road maintenance efforts; it is still not free, it requires substantial attention to organization, and private contractor training is essential.

Madagascar is currently on its Seventh National Highway Loan Program (with financing led by the World Bank) and in the process of planning for its Eighth. Total costs for the Seventh Program are projected to be about \$225 million: some \$132 million in donor financing; 51.7 billion FMG in counterpart funds; and 125 billion FMG from Government's budgetary resources.<sup>16</sup> Expenditure, however, seems to be below budget in the early years of the Program. The World Bank reports that at the 1989/90 rate of funding (about \$14 million per year in donor funding), the 7th highway program will result in bringing some 17 percent of rural roads to good condition by 1994 (assuming continued maintenance of those rehabilitated early in the Program).<sup>17</sup>

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<sup>14</sup> World Bank Madagascar: Rural Road Sub-Sector Strategy, January, 1991, p. 1

<sup>15</sup> World Bank. Madagascar: Rural Road Sub-Sector Strategy, Jan., 1991, p. 15.

<sup>16</sup> Ministère des Travaux Publics Document Préparatoire. Reunion des Bailleurs de Fonds du Septième Programme Routier. Mai 1991, p. 6.

<sup>17</sup> World Bank. Madagascar: Rural Road Sub-Sector Strategy, Jan. 1991. p. 14

This level of funding will not provide for a net expansion of the road network, so areas which are currently unserved will remain unserved. Nor, according to the World Bank's analysts, will the level of effort (and financing) be enough to achieve the 30 percent rehabilitation target which they judge would be more conducive to removing the barriers to agricultural trade. This would require, according to their calculations, almost double the amount of [donor] financing and an accelerated pace of work. But it would provide an economic rate of return of "42 percent if investments are made primarily in areas of medium to high agricultural potential in line with the proposed agricultural strategy."<sup>18</sup>

The wealth of information and experience of other donors in the rural roads sub-sector is both encouraging and discouraging at the same time. The organizational capacity of the MPW is clearly critical to accelerating the road rehabilitation program and to establishing a more routinized maintenance system. A number of other donors, however, are committed to working closely with the Ministry on this capacity and it might be assumed, at least tentatively, that additional resources could not only be used, but used well. Further, brief consultation with the largest private sector road construction firm in Madagascar indicated that there might be ways to engage the private sector in some of the training of small- and medium-entrepreneurs in road maintenance (through sub-contracting arrangements and on the job training) as well as interest in expanded private sector implementation of maintenance-only programs. An additional MPW constraint identified by the Swiss and NORAD evaluations as of practical importance to all road rehabilitation and maintenance -- confirmed by the private sector company -- is the budgetary management process on the side of the Government's contribution.

In sum, however, the situation in the road sector indicates that: the Government has a good idea of what needs to be done, contracts regularly with private firms to undertake the work, and has the capacity to supervise the work being carried out; other donors are prepared to emphasize primary and secondary road construction and rehabilitation in general and, specifically, in the zones of Mahajanga and Fianarantsoa; the small- and medium-scale private road contracting sector is well on the route to being developed and, with additional training, better contracts, and better supervision, could be more broadly engaged in road maintenance activities; the labor-intensive approach to maintenance is cost-efficient and capable of providing substantial amounts of employment benefitting poor rural households (although the wage issues need to be addressed); and there is general concurrence that improved maintenance will surely lead to lower marketing costs.

Investing some 51 billion FMG (less than \$30 million) in road maintenance over a period of four years could ensure the every-other-year repair of about 1000 km of rural roads. This assumes that each kilometer requires 4 million FMG (as recommended by the NORAD study for labor-intensive maintenance carried out by a small to medium private company). For 1993, the Ministry of Public Works has planned "routine maintenance" on 1,250 km of rural roads. Similar maintenance planned for 1994-1996 is an average of 3,000 km per year. At this rate, the local currency funding generated in

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<sup>18</sup> World Bank. Madagascar: Rural Road Sub-Sector Strategy, Jan. 1991, p. 18

the CAP Project should permit the Ministry to assure the implementation of at least a third of their total program.

However, as a matter of urgency, it would seem to make sense to also experiment with a new approach to emergency road repair suggested by an NGO in Mahajanga. This is already sketched out above in Section V of the PID and seems worth a limited amount of financing to test it out.

d. Financial services

The lack of credit both for operating costs and investment is cited as a problem by all participants in the commodity marketing system in Madagascar: producers, intermediaries, and agribusinesses. Limited access to foreign exchange is cited principally by agribusiness entrepreneurs.

Financial services are currently provided only to a tiny fraction of producers, to a fairly limited "general clientele" of agricultural enterprises and exporters, and not at all to the small- to medium-scale agricultural traders. Producers use so few imported inputs in production at this time that financial services in terms of foreign exchange are not terribly important. However, producers' associations (although limited in number) are actively seeking better relationships with banks for both savings and credit services.

Intermediaries (traders), of course, might be expected to be the principal clients of banking institutions. But crop financing for the major crop produced for the domestic market, rice, covers less than 20 percent of the marketed value. Export crop financing is much more important and constitutes a much larger share of commercial banking services provided by all banks. In part, this is due to lower risks but the importance of this kind of financing has been reinforced since mid-1991 on the changed regulations regarding access to foreign exchange. Currently, only foreign exchange earned by some bank clients can be made available to other bank clients. We return to this below.

Organizational issues are also important constraints on further expansion of financial services. Banks are, since 1989, prohibited from taking major ownership positions in new enterprises (i.e., restricted to less than 15 percent of capital) so they take very close looks at the proposals of any new borrowers. Risk insurance has not proved to be a viable option for safeguarding rural investors although there is wide agreement that some forms of crop insurance might be desirable. The more practical approach to risk management in credit programs seems to be to get a donor to accept it. This also has the effect of bringing a credit line out from under the credit ceiling.

It is essential, however, to consider:

- the potential impact of macroeconomic decisions on the climate for rural lending and for the development of new agricultural enterprises;
- the wisdom of "over-allocating" scarce foreign exchange to commercial agricultural enterprises (producers' associations to agro-industrial enterprises); and

- the risks inherent in the agricultural sector and the capacities of the public and private banks in managing these risks.

The June, 1992, IMF report on the Article IV consultation projects a somewhat gloomy outlook for the economy as whole, assuming continuation of the interim government's policy stance and no adjustment of the exchange rate. The balance of payments deficit is expected to increase (even assuming that exports grow at an average annual rate of 8.3 percent) in 1993 to a "near-record level" of more than 200 million SDRs although foreign exchange reserves, which dropped to less than 10 weeks of imports in 1990 and 1991 are expected to increase steadily over the 1992 to 1996 period. The general macroeconomic outlook for the economy is, therefore, not great -- although the report notes that the government officials with whom this outlook was discussed were more optimistic.

More specifically, the IMF has placed great emphasis, in its discussions with the Government, on the effectiveness of monetary policy. Measures envisioned to improve the effectiveness of monetary management (moving from direct controls such as credit ceilings to the use of indirect monetary instruments such as an interbank market) had actually been introduced in 1990, but were suspended during the political difficulties of 1991. In this recent report, however, the IMF noted that the "impact of the efforts to strengthen monetary policy could...be eroded by the weaknesses of the BTM. Therefore, it [is] imperative that the BTM be privatized as soon as possible, and that the Government accelerate the process..."<sup>19</sup> The IMF team also recommended reintroduction of the open general licensing system (the OGL) as soon as possible; it had been suspended in July, 1991. What happens to BTM is directly pertinent to the CAP Project. So is the process by which foreign exchange (such as that potentially provided by USAID) is allocated.

The BTM privatization is clearly controversial, even within the Government. Not only are there some lingering doubts as to whether it should go through but there are different views as to how the privatization should be accomplished. From the micro-view of an agribusiness firm or a producers' association, the fate of BTM does not seem terribly important -- so long as any deposits are not lost during a reorganization or sale. But given the weight of BTM in the financial sector and in agricultural sector lending, an eye must be kept on where it goes.

The foreign exchange allocation process currently being used is a second-best to the OGL. Banks are allowed to keep 60 percent of the foreign exchange deposited by clients; 40 percent is remitted to the Central Bank. The retention of 60 percent provides an incentive for banks to get engaged in export market-related lending. However, all banks reported that they are currently short of foreign exchange in the sense that their clients' demands always exceed supply. Further, the process has lost all transparency. Bank committees allocate for their clients according to individual bank rules. Only BTM claims to have agricultural sector objectives in mind when it allocates its foreign exchange.

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<sup>19</sup>IMF Madagascar Staff Report for the 1992 Article IV Consultation, June, 1992. p. 13

The individualistic nature of these allocation systems and the overall constraints on supply will require any provision of foreign exchange to be carefully analyzed on a bank-by-bank basis. Nevertheless, all banks consulted were eager to enter into such discussions; they are clearly worth the time.

Discussions with the leadership of BTM (the public bank which has the biggest share of the agricultural lending market), BNI (a privately-owned bank with particular expertise in industrial lending), and UCB (a new Mauritian-South African bank targeting firms interested in dealings with those countries) provided at least some preliminary insight as to what might be involved in directed provision of financial services to producers' associations and agribusinesses interested in expanding their involvement in commercial agricultural production and marketing.

All expressed interest in managing a USAID-supplied line of credit. In the BTM case, this was emphasized because BTM has found itself at its credit ceiling in recent months. In the other cases, the non-ceiling nature of the financing was also attractive, but the banks placed equal emphasis on the fact that the Project technical assistance support in organizing the producers' associations and working with new entrepreneurs would help to reduce the banks' risks. The view was often expressed that the only way that banks could consider expanded producer-level lending was through "mutualization" -- formation of associations in which members assume some financial responsibilities vis a vis other members -- as this both reduced costs of administration and risks of non-payment. In all cases, different options for managing the credit were suggested: usual bank rules, special rules just for the program, venture capital participation or not, length of terms, etc. Clearly, there are several possibilities which need further exploration.

We also began to look at several case studies which should be explored in more detail: the expansion of the FERT assistance to the Tsiroanomandidy area with a lease-purchase arrangement for animal traction equipment, the leadership development program associated with the growth of FIFATA and its financial relationships with BTM, the CAF experience in the Marovoay area, the adaptation of the "distributor" approach to credit which is often used by the trading community and by the private company producing hybrid maize seed. All of these cases should provide additional insight into what makes financial service organizations most responsive to the needs of the commercial agricultural sector -- while keeping them strong enough to survive.

Overall, considering that foreign exchange needs for import are expected to run between 300 and 400 million SDRs per year for the next five years, USAID's possible contribution of \$10 million or so in foreign exchange (or foreign exchange equivalent) will have little direct impact on the macroeconomic situation in Madagascar. However, channeling generated local currency into lending for producers' associations and new agribusinesses which will increase commercial agricultural production could have major effects on banks' rural loan portfolios. The challenge for the PP design will be to find a balance between a special-terms directed credit approach and a more systemic, "regularized relationship" kind of approach.

e. Information Services and Market Information

The lack of timely and accurate information on production and prices has been cited in many reports as a major problem for Madagascar's farmers, traders and exporters.<sup>20</sup> Better market information reduces marketing costs by making the market more transparent. Farmers make better production decisions if they have a more accurate idea of the value of their crops. Traders make better decisions regarding where to source supply and where to sell their goods. People engaged in processing and other value-adding activities are able to manage the procurement and storage costs and decide on the most profitable market outlets. Knowledge about consumers (their incomes, their preferences, their needs) helps everyone to define where they are going and to get there as efficiently as possible.

We, therefore, examined the advisability and feasibility of addressing the need for better market information. This examination considered two very different aspects of the market information system: the telecommunications network and the content of market information available.

(1). Telecommunications

Telecommunication services are poor to non-existent in most agricultural zones. The lack of rapid communication facilities both increases the costs of getting market information and the risks of not having it. Heads of businesses are forced to spend hours on the road simply in order to check on the volume and delivery dates for an order. Businesses must maintain inventories of spare parts because there is no way they can call on distant supplier for rapid delivery.

The Government's Posts, Telephone, and Telecommunications Authority (PTT) is aware of the barriers and inefficiencies which the present system poses to economic operators in Madagascar and has launched a three-phase program for improvement. The first phase will connect Antananarivo and three major cities (of which two are Tamatave and Antsirabe). The second will establish a domestic satellite-based system for 12 towns. The third will expand the domestic satellite-based system. A study is currently going on to look at the needs in each town. They are looking for solutions to the small network problems; Diego Suarez and Mahajanga are the two satellite-based test sites.

The price tag for the three-phase upgrading program envisioned by the PTT is just being worked out (with UNDP technical assistance) and will be available in December, 1992. It is likely to include the costs for increasingly autonomous management of the telephone and telegraph services in Madagascar with a view toward complete privatization in the not-too-distant future.

No technology has been chosen definitively. In the view of PTT managers, there are only 2 or 3 major system builders worldwide. A local import-export firm, Henri Fraise et Fils, is interested in bringing in Motorola.

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<sup>20</sup> See, for example, the discussions in the Abt, Brown, and World Bank papers cited in the references.

Both the Caisse Centrale and the World Bank have indicated an interest in providing lending if the proposed privatization should occur. Joint ventures are not excluded. There are no outstanding financial issues (cross-debts, arrears, etc.) which would slow down privatization. Right now, however, PTT has too many employees, 4000 working on the telephones and telegraph side. Some of these would have to be retired to make way for people with new skills and just to get the levels down (to about 2000 - 2500).

However, it is likely that the system development envisaged will cost in the multi-million dollar range and even this level of expenditure will not ensure complete country coverage.

(2). The Current State of Market Information Services

A USDA report prepared for USAID/Madagascar describes a "fragmented, underbudgetted, underutilized and relatively unknown" set of Government institutions involved in providing agricultural market information. No less than five Ministries and numerous sub-units carry out tasks related to market information. Any program to improve Madagascar's market information system would have to be prepared to unravel this institutional knot.

Thus, despite the potentially important benefits from improved market information, we decided that within the context of the CAP project, support for market information services was not appropriate for the following reasons:

- The regional focus of activities. A regional focus was selected, in part, to allow resources to be concentrated on two high potential zones. It is difficult, if not impossible, to design and implement a market information system which targets only two regions.
- The lack of a commodity focus. Given the diversity of Madagascar's agricultural resources and the differences in potential between the two target regions, a commodity focus did not seem to be either desirable or feasible. However, a regionally based market information system is desirable and feasible only when the system is focused on a particular commodity such as rice or maize.
- The characteristics of market access. Many small producers in Madagascar now have little access to market information because they depend on one or two sub-collectors as purchasers of their crops. As roads improve, however, information flows will improve along with increased numbers of collectors. In the meantime, broadcasting the price of rice (or other crops) in Antsirabe (or other town) is unlikely to improve the producer's bargaining power if only one buyer is at the farmgate.

Improving the flow of market information through improved roads and new or reinforced producer associations is a practical and economical way for the CAP project to address its marketing constraint.

### 3. Costs and Benefits

In this design, therefore, USAID/Madagascar has attempted to:

- define a package of assistance in which elements would complement each other to achieve the objectives sought -- the classic necessary and sufficient criteria combined with economic notion of capture of externalities;
- limit the geographic scope of the interventions to two regions of the country -- thereby increasing the cost-effectiveness of the project by limiting management costs and increasing the possibility for being able to measure Project impact; and
- maximize use of the existing human resource and organizational capacity of current institutions -- focussing only on the development of new capacity at the level of agricultural entrepreneurs, and farmers' associations and minimizing involvement in institutional development.

Further, we considered the relationship between the amount of resources available and the specific resource requirements needed to provide a significant level of support. This helped us to get a feel for the opportunity costs of investing in one area compared to another. And, finally, the level of impact which could be expected in the short- to medium-term was taken into account. Our implicit discount rate was very high.

Application of these criteria results in the proposal laid out in Section IV of the PID. The Project will provide selective financing of production infrastructure and inputs, targeted financing of rural road repair and maintenance, and a substantial human resource investment in private rather than public organizational development. The proposed commodity, financial, and technical assistance provided by USAID in this CAP Project will have a combined value of \$29 million over a period of five years (FY 94-98) and should be associated with incremental increase in commercial agricultural productivity and savings in transport costs for marketed produce. Specific estimates of the value of these benefits will have to be developed during the Project Paper design.

### 4. Assumptions regarding the political/policy environment

It is assumed in this design that the democratic transition will continue and there will not be undue disruption in the normal course of business. It is also, however, assumed that it is more prudent to await the installation of a new government before developing the Project design in further detail. There will certainly be changes in leadership and, probably, some changes in policy directions. It is also assumed that the Government's capacity to implement regional programs will continue to be very limited, particularly in the Ministries of Agriculture and Scientific Research.

However, it is assumed that the momentum in market liberalization will be maintained and the pace of privatization will be stepped up a bit. Further, it is assumed that the Government will provide adequate economic

management to keep inflation, the balance between revenues and expenditures, and the public investment program under control. The specific privatization of BTM will bear watching in this regard. No adjustment in the exchange rate is foreseen for the immediate future even though it is estimated to be slightly over-valued at the current time.

On a tentative basis, it has been assumed that Madagascar's economic outlook is somewhat less pessimistic than the IMF has projected for the next five years, that is, that the value of nontraditional exports will grow slightly more than expected, additional donor inflows will accompany successful completion of the democratization process, and business confidence will not deteriorate below current levels. This outlook is probably not as upbeat as that offered by the Government, however.

Each of these assumptions has derived either from written analysis or the sampling of informed opinion in Madagascar. All should be re-examined in the PP design process in June - September, 1993.

## II. Technical Considerations

On rough economic grounds, we have chosen to focus the CAP Project on improving commercial agriculture in Madagascar by providing assistance to agribusiness entrepreneurs and producers' associations, expanding input supply (including reforming the seed sector), and reducing transport costs by improving roads. The project may also support expanding access to financial services if the PP design shows strong implementation feasibility and high impact. These choices have been made within the larger context of the agricultural sector, its problems and opportunities. The CAP Project must also, however, take into account two types of technical problems: production technologies and marketing technologies.

### A. Production Technologies

Among the multitude of problems afflicting the agricultural sector in Madagascar (and in addition to the ones already cited), the absence of appropriate and market-driven technology is among the most serious. One of the principal assumptions underlying the CAP Project is that improved roads and market networks will provide incentives to increased production of commercial crops. Tied closely to this assumption is another: that Malagasy farmers have the capacity to react to new opportunities by growing new types of crops, employing new methods for growing these crops and improving their cultural practices on those crops which they have been growing for years. The four major production technologies are: seeds, irrigation, fertilizers and farm equipment.

#### 1. Seeds

Yields of all foodcrops (and some beverage crops) produced in Madagascar fall below averages for developing countries according to the Preparation Report for Madagascar's National Seeds Program (1989). The average rice yield is 1.84 ton/ha, maize yields are on the order of 1 ton/ha and the situation for fruits and legumes is comparable. Some of the blame for low yields has to be put on the varieties and qualities of seeds available.

It is generally agreed that there is the problem with poor seed quality in Madagascar. The seeds that are used by producers suffer from deterioration over time and result in inferior products. Compounding the problem is the low level of improved and/or higher quality seed production. In 1989, only 1,500 tons of selected rice seed were produced in Madagascar, enough to plant just over 300,000 ha. or about 2.6 percent of total hectareage. The case of other crops such as maize and horticultural crops is much worse. Improved maize seeds were used on less than 3 percent of land put into maize. Less than one percent of peanuts were grown with selected, high quality seeds. There are no reliable figures on total production of these types of seeds. For example, the entire production of plant material for fruit trees in 1989 was estimated at 200,000 plants, far from the national requirements.

No estimates were available for potatoes, wheat and horticultural crops. The assumption must be that improved seed for these crops is virtually non-existent (PID team interviews support this conclusion). Seed production and distribution is clearly one of the primary technology constraints facing the Malagasy producer.

Responsibility for seed research, multiplication and distribution is divided among three ministries: the Ministry of Agriculture for agricultural crops, the Ministry of Water and Forests for tree crops and forage and the Ministry of Scientific Research for basic research. Research responsibilities are divided between FOFIFA, part of the Ministry of Scientific Research and FIFAMANOR, a Norwegian financed Ministry of Agriculture project. FIFAMANOR carries out research on wheat, triticale and potatoes and FOFIFA covers the remaining food crops.

FOFIFA has had a troubled past, due in part to neglect of basic research in the late 1970's and early 1980's as well as continuing difficulties adapting to the needs of a market oriented economy. Several donors, including FAO, the World Bank and USAID, have devoted significant resources to improving FOFIFA's capacity to carry out the basic research upon which the development of new varieties depends. FOFIFA is the first link in the chain from new varieties to actual adoption by producers. Its record, especially in non-rice varieties, has been very poor. However, the long-term growth prospects of commercial agriculture in Madagascar requires a revitalized basic research effort which devotes more of its resources to non-rice foodcrops. Major infusions of resources have been made or committed (including USAID's program with IRRI to develop new rice varieties). Since varietal research is long-term in nature and there are several donor programs addressing the problem, it was deemed inappropriate by the PID team for the CAP to address seed technology constraints at this level.

FIFAMANOR is a 20 year old regional development project centered in Antsirabe in the Central Highlands. One of its objectives is to conduct research on wheat and potatoes and to carry out extension activities. Norwegian support to FIFAMANOR is about to end and many questions remain concerning its capacity to continue its research work. The regional development organization (ODR) in Fianarantsoa reported that seed potatoes for the present season were in short supply because FIFAMANOR was unable to deliver a sufficient quantity for the region. Likewise, the director of the KOBAMA flour mill stated that he has begun a self-financed program of research because of dissatisfaction with FIFAMANOR wheat research. Most of

FIFAMANOR's research activities involve production of quality seed stock, rather than basic research on new varieties. Potatoes, in particular, require a high quality seed stock which is adapted to resist the wide variety of fungi and blights to which they are susceptible. Potatoes are a high risk crop even with the assurance that the seed stock is appropriate to local conditions. Since wheat and potatoes are two of the most important off-season crops in the Fianarantsoa region, it would be advisable for the PP team to determine whether or not support to FIFAMANOR is warranted.

The national Seed Multiplication Centers (CMS in French) are responsible for producing quality seed in commercial quantities. They are the link between basic research and the seed user. While varietal development is a long process, sometimes stretching on for 10 years or more, seed multiplication is a much shorter operation (3-5 years). Currently, the CMS is not the focus of a concerted donor effort to improve its operations. The Caisse Centrale completed a five year project in 1990 aimed at rehabilitating the Manakara Seed Center and the World Bank has recommended that the CMS be privatized.

It is the opinion of the PID team that supporting the multiplication and distribution of already existing improved varieties is the most cost effective and implementable action that CAP can take to address the seed technology constraint which Madagascar faces. This approach also supports the USAID assistance being provided to FOFIFA and its basic research program by strengthening the institution which will be required to multiply the new varieties when they become available.

## 2. Fertilizer

The capacity of judiciously applied fertilizer to significantly increase rice yields in Madagascar has been demonstrated by a number of researchers (see IRRI reports). Substantial yield increases have been noted for maize, potatoes, cotton and tobacco according to the Norwegian report on Fertilizers in Madagascar. The issue of fertilizer use in Madagascar is a complex and contentious one. At the heart of the problem is the question of cost/benefit for fertilizer use on various crops. Linked inextricably to this issue is question of subsidies.

Since 1972, farmers in Madagascar have seen the subsidy on fertilizer range from 45 percent in 1975 to 16 percent in 1985 to zero in 1992. Over the same period of time fertilizer use has dropped from 34,000 tons to 22,500 tons. Over the years, many donors, especially the Norwegians, have provided fertilizer at subsidized sale prices to the Government of Madagascar. Recent audits indicate that over 3 Billion FMG of counterpart funds, which were generated by the sale of Norwegian fertilizer, were never deposited as expected in the Central Bank account. At this time, the Norwegians have stopped their fertilizer import program and no other donor has stepped in to take their place.

Fertilizers are used predominantly on industrial crops (cotton, tobacco and coffee) and large scale rice production. According to the Price Waterhouse study (1989) the cost/benefit ratio for fertilizer on rice was 2.2 compared to 9.6 for cotton and 5.9 for coffee. Given the rising price of fertilizer compared to the price of paddy - 180FMG/83FMG in 1985 versus 600FMG/325FMG in 1991 - it is not surprising that fertilizer use has declined and that

most small producers employ no fertilizer at all. The PID team was unable to access any data on the cost/benefit of fertilizer on vegetables or potatoes. A more detailed investigation at the time of the PP design should be able to uncover such information.

Fertilizer use in Madagascar suffers from a number of non-price related problems as well. Distribution of fertilizer, a bulky, heavy commodity, is difficult at best in a country with the poor road infrastructure of Madagascar. The transport infrastructure increases costs and delays delivery during crucial periods of the agricultural calendar. Poor or non-existent extension advice on fertilizer use also results in waste or inappropriate use of the fertilizers that do reach small farmers. It is widely recognized by researchers that the full benefits of fertilizers is dependent on such items as high quality seed and appropriate farming techniques. At this time, farmers in Madagascar cannot count on access to either of these complementary elements.

Access to fertilizer at affordable prices would improve the production of a wide variety of crops. The proposed CAP Project approach to this technology constraint is an indirect one. That is, rather than daring to define what types of fertilizers and what types of crops should be employed in commercial production, the Project will seek to provide producers with a better basis upon which to make such choices. In addition to assuring a certain level of road maintenance, Project support to agribusiness enterprises working with producer associations and efforts to improve the accessibility to agricultural financing should allow greater opportunity to buy fertilizer if the producers so desire. Programs such as KOBAMA which provide fertilizer and other inputs under a "credit in kind" program are not seen as an isolated inputs, but rather as components of a package of inputs and extension advice aimed at improving the production of a particular crop. CAP Project support of such programs appears to be a more sustainable as well as a more cost-effective way of addressing the fertilizer constraint.

### 3. Farm Implements

Most farmers in Madagascar depend on hoes and other hand tools to cultivate, weed and harvest their crops. There is some animal traction and the production and sale of locally made plows has increased in the past decade. However, rural insecurity, which often manifests itself in rustling of zebu cattle, makes animal traction an often risky and dangerous strategy. Improved rural security could lead to an expansion of animal traction and the use of metal plows. The fact that a local industry exists for plows is clearly a positive factor.

Except in the major rice producing areas of Lac Alaotra and Marovoay, the use of motor-driven production equipment is very limited. These rice producing regions have the highest per capita ownership of tractors and other machinery for rice field preparation. Given the small size of most plots in the Highlands (estimated at 0.25/ha per plot) and the small average size of farms (less than one hectare), it is not certain the mechanization of agriculture in these areas would be profitable at this time. KOBAMA's efforts to promote mechanized wheat production in the Antsirabe region have proven to be a failure. One of the main reasons is the poor fertility of the soil on the hillsides where the crops were grown.

Use of tractors and other equipment of smaller parcels has not proven practical.

One of the most labor intensive occupations in agriculture is the replanting of rice seedlings. This task is done by hand by women. There are currently only a few small mechanized planters which have proven to be most effective on small plots in Japan and other Asian countries. However, the cost of one machine is 2,600,000 FMG (about \$1,400), well beyond the means of almost all farmers and farmer groups. The promotion of specialized labor saving machines has not been studied in detail, though it appears that rice transplanting is not as much affected by labor constraints as weeding.

Though mechanization of some elements of the Malagasy farming system could prove useful, not enough information is available to define it as a binding constraint on increasing commercial production over the short-term. Some of the resources devoted to the ICI component of the CAP may provide innovators with the opportunity to experiment with new equipment by making it easier to find importers with the required foreign exchange. Targeting assistance to specific types of equipment which in turn are used to improve a widely available input such as seeds is likely to have a greater impact on commercial production in the short-term.

### **B. Marketing Technologies**

Marketing technologies encompass the postharvest functions involved in storing, transforming and packaging agricultural products. In developed countries, one might add advertising technologies as well as retail distribution technologies.

In the case of Madagascar, marketing technologies vary greatly between export commodities and domestic products. Export commodities must meet international grades and standards, including such aspects as size, packaging, degree of humidity, etc. Each of these characteristics imposes certain technological requirements on the producer, transporter, processor and exporter. However, in the case of products destined for the domestic market, such grades and standards do not exist. Consequently, the type of postharvest technologies employed are relatively small scale, unsophisticated and low cost.

With market liberalization, Madagascar consumers are beginning to benefit from improved quality in some agricultural commodities. This can best be seen in the rice market where prices define a range of rice from very high to very low quality. However, this process is just beginning (Berg and Abt reports). As markets develop and consumers increase their capacity to transmit their preferences for quality and convenience, then marketing technologies become as profitable and essential as those currently used in the export trade.

The Abt and Berg reports both cite the weakness of effective demand at the consumer level as a serious constraint to the growth of domestic markets. Simply stated, the vast majority of Malagasy cannot afford to pay the additional price for higher quality, higher processed and better packaged food. It is highly unlikely that within the 5 year time horizon of the CAP Project that this situation will change.

There are several very important crops which require processing including rice, sugar, wheat, cotton and tobacco. In each of these cases, large private and state enterprises have made the necessary investments in storage and processing facilities. There is also ample evidence that small scale rice mills blossomed after the market liberalization of the mid-1980s. For these crops, access to marketing technology is not a binding constraint on their growth.

There are a number of crops in the Central Plateau such as potatoes, vegetables and fruits with the potential to become important commercial crops. Aside from a limited market for french fried potatoes and some canned vegetables and fruit juices, these products are sold fresh in relatively small quantities in markets and small stands. As production grows the need to improve storage facilities and to increase shelf life through processing will also grow. However, it is impossible to predict which crops will move to this level of production and market technology, if any within the timeframe of the CAP project. The market (demand) for marketing technology for domestic crops is a moving target at this point. It would not be sensible or feasible for USAID to identify a specific technology or set of technologies for support within the context and timeframe of the CAP project. It will be more effective to focus resources on enabling producers and entrepreneurs to take advantage of opportunities they identify to add value to these raw commodities.

### III. Social and Institutional Aspects of the Project

This section provides a brief overview of the principal beneficiaries of the CAP Project, the primary implementing agencies and the public/private sector relationships involved in the CAP Project's implementation.

#### A. Beneficiary Groups

##### 1. Farmers

The principal group to benefit from the CAP project will be the farmers in the Fianarantsoa and Mahajanga regions. It is estimated that more than 97 percent of the population of the Fianarantsoa region works in agricultural production. The figure for Mahajanga is over 95 percent. These farmers will make up the members of the associations which the CAP Project will reinforce and promote through the increased relationships with agribusinesses. Realistically only a very small percentage of farmers in each region can expect to receive this direct benefit given that it has taken the FIFATA federation of farmer groups over five years to reach approximately 1,500 farmers in the Antsirabe region. However, it is expected that a large percentage of farmers will benefit from the improved roads and improved seeds which the CAP project will finance.

In the Mahajanga region, the production of rice on irrigated perimeters is the principal activity. The Mahajanga region is a net exporter of rice and a producer of a wide variety of other crops, some of which are shipped elsewhere for processing and exported as well as consumed locally. It appears to be more or less self-sufficient in the production of tropical fruits and vegetables. In contrast, the Fianarantsoa region is a net exporter of fruits and vegetables and a net importer of rice. Thus the

proposed improvements in interregional trade will have a double benefit for these farmers: improved trade will provide them with better access to markets for their crops while at the same time improving their access to goods (both food and non-food) coming from other regions of Madagascar.

## 2. Rural Laborers

The High Intensity Labor (HIL) approach for road maintenance which CAP will promote and support will provide an estimated 5,000 seasonal jobs for rural laborers. The NORAD evaluation of HIL road maintenance underlined the importance of the job creation affect of the program in the Antsirabe region. Laborers were paid between 32 -35,000 FMG per month for work under this arrangement. This month wage was estimated to be almost twice as high as wages paid for farm work. The profile of the road workers included 25% women, many of whom were single heads of household or teenage girls. The remainder of the workers were male farmers and landless workers. The monthly wage made the work unattractive to such farmers as wheat growers who had average earnings of 100,000 FMG per month from sale of their crop to KOBAMA. It appears that the road construction and maintenance component will be self-targeting on very poor farmers, women and wage laborers. There is no comparable data for the Mahajanga region, though it is likely that a similar self-selection process will occur based on the monthly wage offered.

## 3. Small & Medium Sized Road Contractors

The extensive rural roads component of the CAP Project will depend on local contractors to carry out rehabilitation and maintenance activities. It is the project's intent that award of contracts will follow a process similar to the one implemented by NORAD. The NORAD program issued solicited offers from small local contractors to carry out specific, limited work on manageable lengths of road. The competitive bidding process was linked to a prior training and certification process run by NORAD. Only firms which had successfully completed the training and had received certification could bid for the subsequent work. Most of the businesses which became involved in the NORAD program were family run operations that were involved in small scale construction activities in the local area. Under the CAP, it is expected that similar types of small and medium enterprises will benefit from road rehabilitation and maintenance contracts. Since the CAP project will support HIL maintenance it is not expected that these small contractors will benefit from the provision of any heavy equipment.

## 4. Transporters and Traders

A high percentage of the CAP Project's resources will be devoted to improving the rural road infrastructure. Clearly, the two most directly affected beneficiaries of this intervention are the traders and transporters who must navigate these obstacles to reach their customers. It is conservatively estimated elsewhere in this PID that over 2,500 kilometers of roads will be improved and maintained in the two target regions over the five years of the CAP project. The types of transporters and traders who will benefit from the CAP project run the gamut from the petty trader (sous collecteur) who handles 20 to 30 tons of rice a year to major merchants which operate fleets of 10 - 20 ton trucks.

## 5. Processors

A significant proportion of the crops which are commercially produced in the Fianarantsoa and Mahajanga regions end up as processed commodities. In the case of rice, it is expected that large scale rice millers such as SORIMA in Mahajanga will benefit from easier procurement of supplies because of the improved road network. Likewise, small rice millers will also find it easier to procure their stocks and move their milled rice. The KOBAMA wheat mill stands to benefit from the improved roads as well as increased wheat production from new farmer associations in the Fianarantsoa area. Though it is impossible to predict with any accuracy, it is likely that current low volume processors of fruit juice and other off-season crops will find greater supplies from more accessible areas.

## 6. Consumers

Following the logic of the CAP project, it stands to reason that the ultimate beneficiaries will be rural and urban consumers. Improved production conditions coupled with better roads should lead to both improved availability and lower prices for consumers in the two target regions as well as Antananarivo and other parts of the country. Urban consumers of rice and wheat stand to benefit from more assured supply (in part from the Title III wheat imports) while rural consumers should also benefit from greater choice and lower prices for non-food items such as candles and other necessities.

## B. Implementing Agencies

### 1. Agribusiness Firms and Producer Associations

Primary responsibility for implementing the CAP project will rest with a competitively selected U.S. institution working closely with a wide variety of private Malagasy organizations. This institution will carry out the training and assistance that agribusiness firms and producer associations will require.

### 2. The Ministry of Public Works

The exact modality for the execution of the roads rehabilitation and maintenance component of the CAP Project awaits definition during the Project Paper design. However, it is clear that the Ministry of Public Works will have an important role in the effort. The NORAD experience placed the responsibility for contracting local firms in the hands of the MPW. This element had its problems which appear to have centered on the award of contracts to lowest bidders, when it was clear that the bids were unrealistic. Until the PP team studies this issue in greater detail, it would be useless to speculate on the exact responsibilities and duties of the MPW.

## C. Public and Private Sector Relationships

The CAP Project is a private sector oriented project. Almost all of the direct beneficiaries of the project are either private non-profit or for profit enterprises. However, the Project also stresses the facilitating

role that government must fill in order for markets to operate efficiently. Thus, the CAP effort will place a great deal of importance on ensuring the development and supply of high quality seed and improved telecommunications between different regions of the country. Obviously, the development and preservation of a transportation network is a public sector responsibility, though the actual construction and maintenance is contracted out to the private sector. In each of its components, CAP seeks to distinguish between the roles that private individuals and firms must play in building and agricultural production and marketing system and the appropriate role for the government.

Madagascar has an economy in transition. CAP must recognize this fact in its approach. Innovation and flexibility in project design and implementation are necessary. Also, the project will have to facilitate increased cooperation and dialogue between the public and private sectors involved with commercial agriculture.

The PID team carried out interviews with senior government officials, leaders in the private sector and heads of local and international NGOs. The consensus is that the climate for public/private sector collaboration is good and that the aims of the CAP Project support such cooperation.

ANNEX C

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