

A.I.D. EVALUATION SUMMARY PART I

(BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS)

A. REPORTING AID UNIT: <u>OAR/MADAGASCAR</u> (Mission or AID/W Office) (ES#)	B. WAS EVALUATION SCHEDULED IN CURRENT FY ANNUAL EVALUATION PLAN? yes <input checked="" type="checkbox"/> slipped <input type="checkbox"/> ad hoc <input type="checkbox"/> Eval. Plan Submission Date: FY <u> 0 </u>	C. EVALUATION TIMING Interim <input checked="" type="checkbox"/> final <input type="checkbox"/> ex post <input type="checkbox"/> other <input type="checkbox"/>								
D. ACTIVITY OR ACTIVITIES EVALUATED (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report)										
Project # 687-0101	Project/Program Title (or title & date of evaluation report) Evaluation of the Use and Socio-economic Profitability of Imported Commodities under the MADAGASCAR Agricultural Rehabilitation Support Project - Dec. 23, 1987	<table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">First PROAG or equivalent (FY)</th> <th style="text-align: center;">Most recent PACD (mo/yr)</th> <th style="text-align: center;">Planned LOP Cost ('000)</th> <th style="text-align: center;">Amount Obligated to Date ('000)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1985</td> <td style="text-align: center;">09/89</td> <td style="text-align: center;">14,235,000</td> <td style="text-align: center;">14,235,000</td> </tr> </tbody> </table>	First PROAG or equivalent (FY)	Most recent PACD (mo/yr)	Planned LOP Cost ('000)	Amount Obligated to Date ('000)	1985	09/89	14,235,000	14,235,000
First PROAG or equivalent (FY)	Most recent PACD (mo/yr)	Planned LOP Cost ('000)	Amount Obligated to Date ('000)							
1985	09/89	14,235,000	14,235,000							

E. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR Action(s) Required No actions have been recommended.	Name of officer responsible for Action	Date Action to be Completed
(Attach extra sheet if necessary)		

F. DATE OF MISSION OR AID/W OFFICE REVIEW OF EVALUATION: mo 12 ~~11~~ yr 87

G. APPROVALS OF EVALUATION SUMMARY AND ACTION DECISIONS:

Project/Program Officer <i>Donna Stauffer</i> Signature <u>Donna Stauffer</u> Typed Name	Representative of (Borrower/Grantee) <i>Rachelina Rivo</i> Signature <u>Rachelina Rivo</u>	Evaluation Officer <i>Donna Stauffer</i> Signature <u>Donna Stauffer</u> Typed Name	Mission or AID/W Office Director <i>Sam Rea</i> Signature <u>Sam Rea</u> for
Date: _____	Date: _____	Date: _____	Date: _____

IDENTIFICATION DATA

ACTIONS

H. EVALUATION ABSTRACT (do not exceed the space provided)

The project aims to support the rehabilitation and recovery of the Malagasy agricultural sector through increased foreign exchange allocations for imports of key agricultural and rural transportation inputs. As of November 1987, 69 Ford Tractors, 100 Ford light trucks, a low bridge superstructure, and a large supply of Caterpillar spare parts have been imported under the program. The purpose of the 1987 annual evaluation is to build on the November 1986 evaluation by documenting the impact of the project, particularly the extent to which the imports have benefitted poor farmers. The Malagasy consulting firm which carried out the evaluation used a series of interviews and questionnaires to arrive at these conclusions:

- o There is a very strong demand for the imported commodities, and therefore the project should be maintained or expanded.
- o The private sector is the main purchaser of these commodities.
- o Imported tractors directly benefit the farmers who purchase them by allowing improved and expanded cultivation. The tractors indirectly benefit those small-holders who are able to rent them and those laborers who enjoy better employment opportunities on the expanded fields.
- o The importation of Caterpillar spare parts benefits the local road-building firms and their employees, which rely on the availability of these parts to maintain their equipment.
- o The importation of light trucks benefits private service industries, mostly involved in small rural trade.
- o The imported components to construct the Namakia bridge benefit the area's agricultural production.

The principal lesson of this evaluation is that significant demand for commercial vehicles exists in Madagascar, and that a Commodity Import Program can help lessen the foreign exchange bottleneck which keeps that demand from being met.

I. EVALUATION COSTS

1. Evaluation Team		Contract Number OR	Contract Cost OR	Source of
Name	Affiliation	TDY Person Days	TDY Cost (US\$)	Funds
Messrs Tovonanahary	O.S.I.P.D.			
A. Rabetsitonta	Consulting Firm		\$3,486 budgeted	687-0101-
Louis Paul Randria-			under Amendment	3-70002
marolaza			no.2 consultancies	
Hugues Fevrier	Rajaonson			
Mrs. Caroline Barnes	REDSO/ESA	10 days		
2. Mission/Office Professional Staff Person-Days: (estimate) <u>7</u>		3. Borrower/Grantee Professional Staff Person-Days (estimate) <u>5</u>		

A.I.D. EVALUATION SUMMARY PART II

J. SUMMARY OF EVALUATION FINDINGS, CONCLUSIONS AND RECOMMENDATIONS (Try not to exceed the 3 pages provided)

Address the following items:

- Purpose of activity(ies) evaluated
- Purpose of evaluation and Methodology used
- Findings and conclusions (relate to questions)
- Principal recommendations
- Lessons learned

Mission or Office: Madagascar

Date this summary prepared: July 1988

Title and Date of Full Evaluation Report:

Evaluation of the Use and Socio-economic Profitability of Imported Commodities under the Madagascar Agricultural Rehabilitation Support Project, December 1988

1. Purpose of activity evaluated

The purpose of the commodity import component (CIC) of the Madagascar Agricultural Rehabilitation Support (MARS) Project is to support the rehabilitation and mid-term recovery of the agricultural sector through increased foreign exchange allocations for imports of key agricultural and rural transportation inputs required for the rehabilitation effort. An increase of these inputs in rural areas is stated as an end of project status benchmark. The CIC addresses the critical foreign exchange constraint which affects the agricultural and transportation sectors. The project strategy centers on using private sector firms to import and distribute the total amount of the commodities.

2. Purpose of evaluation and methodology used

The purpose of the evaluation is to document the developmental results and impact of the CIC, in particular, the extent to which the program is directly or indirectly benefitting poor farmers. The methodological approach was a progressive one, beginning with interviews with the importing companies in order to select an initial sample of direct beneficiaries, generally representing the purchasers. Then from this, a second sample of indirect beneficiaries concerned with the end use of the commodities was selected. Questionnaires and interviews were then targeted at these sample populations.

3. Findings and conclusions

As of November 1987, 69 Ford tractors, 100 Ford light trucks, a low bridge superstructure, and a supply of Caterpillar spare parts for road-building equipment were imported into Madagascar under the MARS agreement and its Amendment No. 1. The import system, which involves the General Planning Directorate, the Ministry of Commerce, the Central Bank, and A.I.D., has been efficient. Except for the last shipment of trucks which was adversely affected by the devaluation in August 1987, the equipment has been sold quickly after arrival in country.

The utilization of commodities imported under the project supports two of the aims of the GDRM's current economic policy: (1) the struggle for food self-sufficiency; and (2) export promotion. It encourages farmers to save by facilitating access to essential equipment and encourages semi-mechanization and farm produce collection using Ford tractors and light trucks. Likewise, local road-building firms become more competitive in bids for large road

of agricultural development projects since they can rely on the availability of Caterpillar spare parts and thus maintain their heavy equipment. In addition, the system which was installed for management of the MARS funds helps the national economy to mobilize and keep rational control over foreign currency for the financing of investment in key sectors.

TRACTORS: After their import, two out of every three tractors were purchased by the private sector, the majority concentrated in Toamasina province. Almost all private farmers use their tractors in direct agricultural production, while the parastatal companies mainly use the tractors for the collection of cash crops and the transportation of sugar cane. The private purchasers of Ford tractors tend to be older men who have sufficient savings to make the investment. Overall only 13% of the cost of the tractors was financed by bank loans. Utilization by the owner was more intensive in the private sector than in the public sector. In the private sector, the time the tractor is rented out (mostly to small-holders) averages 1.5 months/year. Tractor use has proved economically beneficial to the owner, as the associated expansion in cultivated area and improvement in yields have increased production value, despite the 1987 fall in producer prices. Tractors have also improved the employment situation in rural areas, particularly with regard to the women and poor involved in rice transplanting and weeding work.

Two major disadvantages are: (1) the tractors' high cost which is difficult to manage in view of climatic risks and agricultural price fluctuations; (2) the problem of maintenance for farms situated long distances from after-sales service centers.

CATERPILLAR SPARE PARTS: The private sector is by far the largest user of Caterpillar spare parts. Road works have benefitted most, followed by agro-industry, mines, and industrial fishing. The direct beneficiaries are the 15 purchasing companies themselves, many of which would have closed operations if it were not for their access to Caterpillar parts. The indirect beneficiaries are the estimated 3,200 workers employed by these companies. A third category of beneficiaries is the local population which gains from the completion of roads, dams, and public buildings, and even improved access to processed goods such as sugar.

LIGHT TRUCKS: The purchasers of the imported light trucks are all in the private sector and the vast majority are involved in service industries. Most of the trucks are used for commercial transportation of inputs, farm produce, and consumer goods to and from rural areas. 57% of the purchasers are individuals and 43% are private companies. In general the trucks are well liked, however, spare parts are difficult and expensive to acquire.

NAMAKIA BRIDGE: The original project agreement designated \$4,460,000 for the importation of a low-bridge superstructure to traverse the Mahavavy river in Namakia. The bridge construction was necessary to support the sugar cane cultivation, sugar refining, and rice production in the area. The now-completed structure facilitates the transportation of inputs, produce, and agricultural workers in four districts.

d

4. Recommendations

- o There is a very strong demand for these commodities and it therefore is recommended that the project be maintained and, if possible, intensified.
- o The great majority of project beneficiaries acknowledged an increase in their production and income. Consequently a diversification of the types of commodities imported is recommended.
- o Because low producer prices threaten the ability of some farmers to pay off loans taken out to purchase the vehicles, action programs should be drawn up to stabilize crop prices at an economically viable level.
- o Because vehicle upkeep may prove problematic, a follow-up questionnaire is recommended to establish a list of the most frequently needed spare parts. Based on this list, a standard set of parts should accompany future vehicle sales.
- o The MARS project should explore modifications to existing bank credit systems. Terms should be lightened and access for young people and women should be improved.

5. Lessons Learned

The principal lesson learned from this evaluation is that there is significant unmet demand for work-related vehicles in Madagascar, and that a Commodity Import Program can help loosen the foreign bottleneck which keeps that demand from being met.

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full evaluation report.

L. COMMENTS BY MISSION, AID/W OFFICE AND BORROWER/GRANTEE

This evaluation meets the demands of the scope of work by explaining who the direct and indirect beneficiaries of the MARS project are and how the imported commodities are being used. The evaluation team spent sufficient time in the field and the survey design and data collection were good. However, the final presentation, analysis, and synthesis of the collected data is unsatisfactory. The rigid questionnaire/survey methodology employed by the evaluation team is matched by a rigid writing style that loses the forest for the trees. Data is presented in a scattered fashion, never to be summarized in a coherent conclusion. A major shortcoming of the evaluation is that insufficient attention was given to quantifying the financial benefits received by the beneficiaries of the program, which resulted from a less than rigorous completion of the survey questionnaire sections dealing with such quantification of benefits. Most of the recommendations are much too sweeping and are not "actionable under the project." (eg. "action programmes should be drawn up to stabilize the producer price of food crops...") While the data collected by the team and the report's positive assessment of the project coincide well with conclusions drawn by AID/Madagascar and REDSO/ESA staff, no particularly broad or insightful lessons are to be found in the evaluation report. The local consulting firm which carried out the study was hired on a trial basis. Because of the generally disappointing quality of the final report, AID/Madagascar has decided not to contract out the entirety of such a study to a local firm in future. Rather, local consultants will be hired to work with an experienced A.I.D. direct hire employee or foreign consultant.

MISSION COMMENTS ON FULL REPORT

XD-994-993-A

Attachment 1

60222

EVALUATION OF THE USE AND
SOCIO-ECONOMIC PROFITABILITY
OF IMPORTED COMMODITIES UNDER THE
M A R S PROJECT

(Madagascar Agricultural Rehabilitation Support)

Report on the study carried out by:

Messrs Tovonanahary A. RABETSITONTA
Louis Paul RANDRIAMAROLAZA
Hugues Fevrier RAJAONSON

with the participation of

Mrs Caroline BARNES

Antananarivo, 23 December 1987

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LIST OF ABBREVIATIONSAbbreviations used in the Questionnaires

DBT : Direct Beneficiaries of Tractors
 IBT : Indirect Beneficiaries of Tractors
 DBS : Direct Beneficiaries of Spare Parts
 IBS : Indirect Beneficiaries of Spare
 DBL : Direct Beneficiaries of Light Trucks Parts

II - Initials used

HIL : High-Intensity Labor
 JIRAMA : JIRO sy RANO MALAGASY "Electricity
 and Water of Madagascar"
 KRAOMA : KRAOMITA MALAGASY "Malagasy Chromium"
 MPW : Ministry of Public Works
 LIR : Liberalised Import Regime
 RNCFM : Reseau National des Chemins de Fer
 Malgache "Malagasy National Railroad
 Network"
 SIRAMA : SIRAMAMY MALAGASY "Malagasy Sugar"
 SMCT : Societe Malgache de Carriere et
 Terrassement "Malagasy Quarry and
 Excavation Company"
 SNBCE : Sucrerie de Nossibe et de la Cote Est
 "Nossibe & East Coast Sugar Refinery"
 TUT : Taxe Unique de Transaction (de 15%)
 "Single Transaction Tax"

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INTRODUCTION

This report presents the results of a study on the impact of the use of imported commodities under the MARS project prior to November 1986. It is particularly concerned with the direct and indirect beneficiaries of these commodities and the types of benefits obtained and it questions whether the lower socio-economic groups and women were able to take advantage of it.

The data and various tables contained in this report are the result of manual scrutiny organized jointly with the coding of questionnaires and carried out by the Study Team staff.

In publishing this report, we would like to answer the questions asked in the Terms of Reference laid down by USAID, i.e. Who are the beneficiaries of the MARS project? What kind of benefits have they obtained during the last 12 months? In addition to these answers, we are suggesting some major action orientation and outlining realistic and attainable recommendations.

We would firstly like to thank USAID for having entrusted us with this important study theme. Our gratitude is more particularly towards the staff of the USAID office in Antananarivo and individually to Mr. Samuel S. Rea, Resident Representative whose collaboration was flawless.

We wish to thank above all, Mrs. Caroline Barros and Mrs Roberta Mahoney, both of USAID Nairobi. The former wrote Sections 1 and 2 of the Study and the latter helped in the setting up of the questionnaires.

Also, Miss Donna Stauffer and Mr. Gerard Rakotondrainibe of USAID Antananarivo who collaborated with us throughout the Study and provided us with their pertinent suggestions, warrant all our thanks.

We also wish to thank the representatives of the LANDIS MADAGASCAR and HENRI FRAISE Fils Companies, the Directors of the State companies, the private companies and also the individuals who submitted to our questioning with kindness and patience.

Finally, we wish to express our thanks to all the people who have contributed to the realization of this Study through their help and devotion. Special mention should be made of Mr. Simon Razato Rarijaona who was responsible for the typing.

Antananarivo, 10 November 1987

Tovonanahary A. RABETSITONTA
Director OSIPD

1 - OVERVIEW OF THE IMPORTATION OF COMMODITIES
UNDER THE MARS PROJECT

1.1 - Purpose and Context

The purpose of the commodity import component (CIC) of the Madagascar Agricultural Rehabilitation Support (MARS) Project is to "support the rehabilitation and mid-term recovery of the agricultural sector through increased foreign exchange allocations for imports of key agricultural and rural transportation inputs required for the rehabilitation effort". An increase of these inputs in rural areas is stated as an end of project status benchmark.

The CIC addresses the critical foreign exchange constraint which affects the agricultural and transportation sectors. The project strategy centers on using private sector firms to import and distribute the total amount of the commodities (e.g. computers and vehicles) and a bridge superstructure procured directly by AID or the GDRM.

The commodities eligible for importation under the project support the GDRM plans for economic development. The GDRM public investment program of 1983 emphasized selective rehabilitation, maintenance and higher capacity utilization. In general, the plan centered on:

- a) increasing food production and reducing food imports, and
- b) increasing production of export crops and improving their quality. In the transport sector, the Government identified an economic network of some 10,000 kms of primary and secondary roads for priority rehabilitation. The subsequent GDRM economic plans continue to focus on policies and investments to improve agricultural production and marketing, and strengthen the transportation sector.

Throughout 1980-1986, there were substantial annual reductions in the volume of imports due to the scarcity of foreign exchange, and the balance of payments situation remained weak due to poor export performance and debt service payment obligations. It was extremely difficult for importers to obtain access to foreign exchange to permit importation of equipment and spare parts required in the rehabilitation effort.

Imports (F.O.B.) in 1986 were limited to about US\$ 330 million, a drop of over 50% in real terms from their 1980 level (US\$ 764 million). Since January 1987, the GDRM has introduced a liberalized import regime as a device to allocate foreign exchange for consumer goods, raw materials, equipment and spare parts. Importers bid for the foreign exchange at the official floating rate and are required to pay a 5% fee (initially the fee was set at 10%) on the amount requested.

The extent to which the new system meets the demand for foreign exchange in the agricultural and transportation sectors is unclear at this time.

1.2 - Financing and Eligible Commodities

The original project agreement, signed April 1985, specified that farm tractors, spare parts for road building tractors and graders, and for a low-bridge superstructure would be financed and US\$ 4,460,000 was designated for this purpose. The MARS Amendment No. 1 of June 1986, provided US\$ 2,174,000 to be used to import:

- a) spare parts for selected road maintenance equipment and agricultural tractors;
- b) light duty trucks and spare parts for them;
- c) a limited amount of new road building equipment.

Under Amendment No. 3, signed March 1987, an additional US\$ 1,175,000 was designated for the same types of commodities.

Subsequently, US\$ 3,000,000 was obligated under Amendment No. 4 of August 1987 and US\$ 1,416,000 under Amendment No. 5 of September 1987.

Amendment No. 4 added batteries for road construction equipment to the list of items eligible for financing under the project.

In the original Project Paper, it was determined that the size range of tractors most needed by the agricultural sector were those in the 40 to 75 horsepower range, thus limiting tractor imports to this smaller size range, suitable for medium and small scale private operators in contrast to estates and plantations. During implementation, however, it was found that there was a high demand for medium size horsepower tractors and twenty 82 HP tractors were imported. Furthermore, the AID Letters of Commitment to the U.S. manufacturers reference appropriate schedule B numbers, thus controlling the types and size range of the commodities that are imported. Thus, in these ways, the CIC seeks to ensure that the commodities are appropriate for medium to small scale operators in the private sector.

However, as is standard procedure in AID commodity import programs, the importers are not required to sell commodities to any particular group of beneficiaries.

1.3 - Implementation

The Director General of Plan (DGP), as the prime implementing Ministry, allocates foreign exchange to imports based upon requests received within the terms of the project. The requests are submitted to AID, the Ministry of Commerce and the Central Bank. The AID office in Madagascar then determines whether or not a particular transaction is eligible for AID financing. USAID certifies the eligibility of items in a letter to the Ministry of Commerce prior to each issuance of an import license. The DGP has developed detailed import procedures to be followed by each participating importer.

Although in the original project design, it was anticipated that up to four importers of American commodities would participate in the program, only two submitted requests for foreign exchange allocations: the local FORD dealer, LANDIS MADAGASCAR, and the local CATERPILLAR dealer, HENRI FRAISE Fils et Cie. Recently, however, the local JOHN DEERE representative has requested and received a foreign exchange allocation for the importation of farm tractors.

As of November 1987, the following commodities have been imported:

MARS (Original Grant)

<u>Commodity</u>	<u>Arrived at port</u>
26 FORD tractors	April 1986
26 FORD tractors	August 1986
17 FORD tractors	February 1987
Low bridge superstructure	August/Sept. 1987

MARS Amendment No. 1.

50 FORD Light trucks	June 1987
50 FORD Light trucks	September 1987

In addition to the above commodities, CATERPILLAR spare parts first began arriving in April 1986. Orders are placed on a monthly basis, although emergency orders may be placed at any time. The spare parts are air-freighted and arrive regularly.

In general, the system has been efficient although initial delays were experienced as the system was being established. The FORD equipment has been sold within one to four months after arrival in the country. The exception to this has been the last shipment of trucks. Because of the devaluation in August 1987, causing the selling price to increase from 19,000,000 FMG to 30,500,000 FMG, and the lack of credit facilities for vehicles, 35 of the light trucks remain to be sold.

1.4 Counterpart Funds

The importers are required to deposit 100% of the local currency equivalent into the special account at the Central Bank at the time they collect the import license which is required to clear the commodities through Customs. The CATERPILLAR dealer usually makes deposits once very two weeks. Except for a small amount allocated to a Trust Fund for US Government use (US\$ 165,000 from the original MARS project and the same amount from revenues generated by MARS Amendment No. 1 imports), the funds in the special account are available for use in accordance with the agreement between USAID and the GDRM which applies to use of the PL 480 counterpart funds.

The counterpart funds support self-help measures to improve the production, storage and distribution of agricultural commodities, and which directly contribute to the development of poor rural areas and enable the poor to actively participate in increasing agricultural production through small farm agriculture. The funds are to be used for projects, particularly in the agricultural sector, that support the economic policies put forward within the principles of the GDRM's Public Investment Policy. In particular, projects with the following aims are eligible for financial support:

- to increase food production, particularly rice, through the completion, repair, maintenance or rehabilitation of agricultural infrastructure including irrigation canals, for the benefit of small farmers as well as for small and middle-sized agricultural enterprises;
- to improve access to productive agricultural areas through the maintenance, rehabilitation and construction of road and bridges;
- to support services and institutions responsible for data necessary to continue the rehabilitation of the agricultural sector;
- to support the National Rice Research Program in liaison with the USAID-supported International Rice Research Institute project, as well as to make funds available to similar food crop research and food crop seed multiplication activities.

The FY 1987 agreement between USAID and GDRM also permits support:

- a) to improve the health of primarily agricultural producers and their families through clean water projects in farm villages;

- b) to the UNICEF/Malagasy Child Survival Program for the period 1987-1991, and
- c) to the national population census.

The FY 1987 agreement specifies that approximately 50% of the funds generated under the agreement will be used to cover:

- a) the local costs of large-scale projects in the Public Investment Program, financed in foreign currency by USAID or other donors, which are designed to improve agricultural production and marketing, and
- b) possible credit schemes for small and medium-sized private investors in agricultural or agro-industrial enterprises.

The counterpart funds generated by the MARS project have not been the subject of special evaluation to assess the extent to which the poor have directly or indirectly benefitted. However, a special evaluation of the PL 480 Title I and II counterpart funds generated since 1981, was conducted in mid-1986. The evaluators concluded that the funds spent on water management activities were not only the most important in terms of money spent (30%), but also generally the most successful and had had the most concrete impact on actual production and the small, usually poorer, farmers. Because of the nature of the activities eligible for funding, it is likely that a significant percentage of the counterpart funds generated from the commodities imported under the MARS Project will have a direct, as well as indirect, developmental impact on the poor. This ought to be covered in the evaluation of the local counterpart fund which is scheduled for June 1988.

2 - OBJECTIVES OF THE EVALUATION

The purpose of this evaluation is to document the developmental results and impact of the Commodity Import Component of the Madagascar Agricultural Rehabilitation Support Project, in particular, the extent to which the program is benefitting the poor farmers, directly or indirectly.

Because part of the commodities concerned are for the agricultural sector and since there is only one rainy season per year in most regions of the country, it was determined that the evaluation would emphasize the commodities which have been in the country for at least 12 months. An end-use evaluation was carried out in October-November 1986 and it included an assessment of the tractors imported to date, but the tractors had been in the country for six months or less at that time and not during the main agricultural season. Therefore, this evaluation focuses primarily on the agricultural beneficiaries of the commodities imported prior to October 1986, although it does provide an overview of the distribution of the commodities received after October 1986 and indicates the likely end use, benefits and beneficiaries. Annex 1 contains the terms of reference of the Evaluation Team.

3 - M E T H O D O L O G Y

3.1 - General approach

The general approach to the field of study is guided by the distribution networks and the end use of the imported commodities.

In general, the approach is progressive beginning with interviews with the importers who are the primary operators concerned in order to select an initial sample of direct beneficiaries generally representing the purchasers. Then from this, a second sample of indirect beneficiaries is selected concerned with the end use of the commodities.

Thus, two quite distinct distribution networks are considered:

- "FORD Tractor and light truck" network
LANDIS MADAGASCAR
- "CATERPILLAR Spare parts" network
HENRI FRAISE Fils and Cie.

As specified in Section 2, the study was to concentrate on commodities received prior to October 1986. In principal, the light trucks were excluded since LANDIS MADAGASCAR did not take delivery until last July.

The survey was intended to be brief and carried out through interviews based on pre-established questionnaires specific for each commodity under study:

- FORD Tractors
- FORD Light Trucks(2)
- CATERPILLAR Spare Parts

3.2 - Survey

As we have indicated previously, the survey was carried out on a primary sample of direct beneficiaries and on a secondary sample of indirect beneficiaries for each of the above-mentioned commodities, except for the indirect beneficiaries of the light trucks.

(2)

The FORD light trucks were finally included in the field of study, not to evaluate the benefits to their indirect beneficiaries since they had only been running for 2 or 3 months before the survey, but in order to determine their use and identify potential beneficiaries. For this reason it would have been premature to undertake detailed evaluation of the benefits gained by indirect beneficiaries.

3.2.1 - Primary sampling: direct beneficiaries

The full list of purchasers from the importers provided the basis of the survey.

An interview with the importers' representatives and analysis of the list of purchasers gave a better insight into the field of study.

3.2.1.1 - "FORD Tractor and Light Trucks"

The LANDIS company was able to import 69 FORD tractors and 100 FORD light trucks under the MARS project. The last delivery was taken in September 1987 and comprised 50 light trucks which were on show for sale at the beginning of the current survey. All vehicles from previous deliveries had been sold prior to the survey; their rate of arrival was as follows:

- 26 tractors in February 1986
- 26 tractors in August 1986
- 17 tractors in February 1987
- 50 light trucks in July 1987.

The target population thus concerns the purchasers of the 52 tractors delivered prior to October 1986 and to a lesser degree those who acquired the 50 light trucks delivered in July 1987.

For the primary sampling for the tractors, the "QUOTA" method was used with a survey rate of 1:5 (20%). This gives a primary sample size of 10 direct beneficiaries for the FORD Tractors.

Status: Private or public sector as well as geographic location provided control variables. Moreover, the three following types of use should be included in this primary sample: food crops, agro-industry and collection of agricultural produce.

As for the light trucks received in July 1987, the prime sample is made up of 7 direct beneficiaries. This small size seems adequate since the status and types of use in this case are somewhat homogeneous (private sector and collection and/or transport of produce).

3.2.1.2 - "CATERPILLAR Spare Parts"

The basis of survey for primary units, the list of purchasers, shows quite a heterogeneous population. Therefore, the "UNIT-KIND" method seemed the most appropriate to us on the basis of dividing the volume of purchases (in FMG) into 6 homogeneous groups.

Delivery of the first spare parts was taken in May 1986 and the list of target-purchasers was closed on 30 August 1986. Among these direct beneficiaries, 15 companies or firms made purchases which represented 92% of the turnover of HENRI FRAISE Fils et Cie.

In selecting from these 15 one "typical firm" from each homogeneous volume of sale group, the primary sample comprises 6 direct beneficiaries of which 3 are in the Private Sector and 3 in the Public Sector. The three kinds of use of spare parts are covered by this primary sample: roadworks, agriculture and agro-industry, and mines.

3.2.2 - Secondary Sampling: indirect beneficiaries

The secondary sample was identified from the interviews with direct beneficiaries. As we already stressed, this secondary sample only concerns the "TRACTOR" and "SPARE PARTS" commodities.

The secondary unit is a household where one member is directly or indirectly concerned by the use of imported commodities.

It was decided, simply for reasons of convenience when collecting data, that the survey staff would designate 3 secondary units per primary unit for both the "TRACTOR" and "SPARE PART" commodities.

The choice of secondary unit took into account the diversity of the socio-economic classes (poor, average and wealthy) and the sex of the individual. As far as possible, this matter was discussed during the interview of the direct beneficiary.

The individual in the secondary sampling unit could be an employee or a direct user (person renting a tractor) or even an end user in the case of a road or the collection of produce.

In all, there will therefore be 48 secondary units of which 30 relate to "TRACTORS" and 18 to "SPARE PARTS".

3.3 - Data Collection and Analysis

During the collection we had to make some slight modifications in the size and composition of the sample.

In fact, certain purchasers were actually buying for resale and therefore not of interest to the totality of the questionnaire. Others simply refused to take part in the survey.

Finally, we surveyed the following sample, shown by the categories to which they belong.

MAP NO. 1

LOCATION OF SURVEY AREA

3.3 Continued

Planned sample and effective sample
by commodity and category

COMMODITY	PRIMARY		SECONDARY		OBSERVATIONS
	"DB"	"IB"	"DB"	"IB"	
	Planned	Effective	Planned	Effective	
Tractors	10	12	30	28	DB: 1 retailer & 1 direct non-user; IB: 2 unsatisfac- tory questionnaire
CATERPILLAR Spare parts	6	7	18	21	1 firm replaced due to refusal
Light trucks	7	7	-	-	-
TOTAL	23	26	48	49	-

The number of units interviewed is higher than planned because 2 direct tractor beneficiaries were either retailers or direct non-users, and one direct beneficiary of spare parts, the firm SIRAMA, divided into two primary units (SIRAMA-Ambilobe and SIRAMA-Namakia).

Nevertheless, these modifications have not affected the quality of the sample since the rules for designating units were followed throughout.

3.3.1 - Data Collection

In order to obtain the data required for the study, interviews were carried out using quasi-closed and pre-coded questionnaires.

3.3.3.1 - Organization of data collection

The national territory was sub-divided into two large zones: the central zone and the coastal zone.

The study staff itself collected the data. The staff comprised three members: one dealt with the central zone, the second the coastal zone and the third coordinated the work on Antananarivo whilst preparing the analysis framework and the format for tables.

The central zone covers the following Districts which are concerned with the primary sample designated for the two commodities:

- Antananarivo I (COLAS, Travaux Publics, SMCT, KRAOMA, Fanalamanga)
- Ambatondrazaka
- Amparafaravola
- Moramanga
- Miarinarivo
- Tsiroanomandidy.

Likewise, the coastal zone is made up of the following Districts:

- Taomasina I (Operation Cafe)
- Ambilobe (SIRAMA)
- Mahajanga I (Refrigepeche-Ouest)
- Mitsinjo (SIRAMA)
- Toliari I.

The survey of both commodities was thus carried out simultaneously in an effort to minimise costs.

3.3.1.2 - Collection procedures

Interviews were held with economic operators both closely and remotely concerned with the imported commodities: importers, purchasers, and secondary beneficiaries.

The primary operators, or importers, were the subject of a semi-directed interview. This interview was included in the preparatory phase and taken up again at the end of the collection phase. This generally enabled us to identify the address of each primary unit and provided details of general information heard or hinted at during the data collection.

The direct beneficiaries, or purchasers, were also reached through the previously selected primary sample.

The study of indirect beneficiaries was determined following the interviews with the direct beneficiaries as laid down in the method chosen for the secondary sampling.

3.3.1.3 - Questionnaires used

The questionnaires used were drafted in accordance with the outline suggested in the terms of reference provided by USAID (page 2: "Information to be collected in the field interviews").

As mentioned previously, the questionnaires were quasi-closed and pre-coded to facilitate both the collection and the analysis.

Two types of questionnaire had to be considered, one for direct beneficiaries (FORD Tractors, CATERPILLAR Spare Parts, and FORD light trucks), and the other for the indirect beneficiaries (FORD Tractors, CATERPILLAR Spare Parts).

In other words, five questionnaires were used: 2 for the "FORD Tractor" commodity (Direct Beneficiaries of Tractors or DBT, and Indirect Beneficiaries of Tractors or IBT), 2 for the "CATERPILLAR Spare Parts" commodity (Direct Beneficiaries of Spare Parts or DBS, and Indirect Beneficiaries of Spare Parts or IBS), and 1 for the "FORD Light Trucks" commodity only intended for direct beneficiaries (Direct Beneficiaries Light Trucks or DBL).

1) - Tractors

The DBT questionnaire included 43 questions under 7 main headings:

- A - Identification of statistical unit
- B - Characteristic of Direct Beneficiary (DB)
- C - Type of land-use by DB
- D - Acquisition and running costs of the tractor(s)
- E - Use of tractor(s)
- F - Impact on farm work when used by owner.

The IBT questionnaire includes 38 questions under 8 headings:

- A - Identification of statistical unit
- B - Civil Status of interviewee
- C - Demographic characteristics
- D - Socio-economic characteristics
- E - Additional revenue
- F - Use of imported commodities
- G - Benefits from use of FORD Tractors
- H - Disadvantages of use of FORD Tractors

2) CATERPILLAR Spare Parts

The DBS questionnaire comprised 27 questions under 5 headings:

- A - Identification of statistical unit
- B - Activities of DB
- C - Acquisition of CATERPILLAR equipment
- D - Use of CATERPILLAR equipment
- E - Estimate of indirect benefits over past 12 months.

The IBS questionnaire comprised 37 questions under the same 8 headings as the IBT questionnaire. The questions under each heading were the same, the only variable being the specification of "Spare Parts" in the IBS.

3) - FORD Light Trucks

Finally, the DBL questionnaires comprises 24 questions under 4 headings:

- A - Identification
- B - Characteristics of DB
- C - Use of Light Trucks
- D - Potential beneficiaries.

3.3.1.4 - Data collection problems

Comparison of the theoretical sample prior to the study and the real sample will show differences for the following reasons:

- difficulty in tracking down the study units and their unavailability for interview: some individuals were away from the study area, others refused, either directly or indirectly, to be interviewed (e.g. KRAOMA, and a DB from Toliari); there was also an occasion where the tractor was used miles away from the beneficiary's dwelling which forced us to go on foot;

- sample deficiency due to lack of information to determine the use made of the imported commodity: e.g. time commodity used not meeting the study criteria (prior January 1987 for REFRIGEPECHE OUEST, DBS), or even the direct beneficiary not being the direct user and neither living in the same place (as in the case of DBT at Toliara I).

All these unexpected occurrences led us to replace defective units during the study, taking care at all times that units with exactly the same characteristics were substituted.

As far as indirect beneficiaries were concerned, an identification problem often arose in that the size of the sample had been limited. Thus, we were forced to make more or less ad hoc choices on the spot.

Furthermore, completing the questionnaires was sometimes if not impossible, certainly very hard going. In the Public Sector information is often dispersed among different services which makes the study long and fastidious in addition to the fact that most interviewees do not have a precise idea as to the information requested such as time used, accounting.... and for that reason the interviewer's help is needed throughout.

The main constraint which precluded resolution of all these problems was without any doubt the time factor. The time allowed for the study was a little too short in view of the distances between the study areas and the difficulties of travel within Madagascar today whatever means of transport is used (plane, bush-taxi, ferry, foot...).

3.3.2 - Analysis

Following the field survey, we undertook a manual analysis of the completed questionnaires. To do this, the answers were coded and the results put into tabular form, the most relevant tables are given in Annex 2.

This analysis was brief and some of the tables should be considered taking account of the component parts of each unit observed. The data then acquires qualitative significance and lends itself well to the analytical process. However, it would be worthwhile to deal with it in the macro context in order to bring out the problems from which recommendations should stem.

3.4 - Work Plan

The Work Plan of operations was as follows:

<u>Type of Operation</u>	<u>Period</u>
1 - Initial field work: interviews with LANDIS MADAGASCAR & HENRI FRAISE Fils et Cie.	Sept 28/30, 1987
- Preparation and submission of Terms of Reference	Oct 2, 1987
2 - Conception and drafting of questionnaires (5)	Oct 15/19 1987
3 - Submission of questionnaires to USAID experts	Oct 19/20 1987
- Printing of questionnaires	Oct 20/21 1987
4 - Travel arrangements for data collection	Oct. 22 1987
5 - Collection of data through interviews	Oct 23 to Nov 06, 1987
6 - Preparing format of tables for analysis	Nov 07/10 1987
7 - Outlining the analysis	Nov 11, 1987
8 - Submission of draft report and outline of analysis to USAID experts	Nov 12, 1987
9 - Development and analysis of study data	Nov 12/19 1987
- Second interview with LANDIS MADAGASCAR and HENRI FRAISE Fils et Cie.	- idem -
10- Writing first version of final report	Nov 20/27 1987
11- Submission of first version of final report to USAID	Nov 28 1987
12- Discussion of first version of report	Dec 07 1987
13- Submission of final version of report	Dec 23 1987

4 - IMPORTATION AND COST OF COMMODITIES

The MARS Project provides definite advantages in the importation of commodities for the recovery of basic economic activities in spite of the foreign exchange difficulties with which the country has been confronted since 1981.

It is already noteworthy that the eligible commodities under the MARS project support two clear aims under the current economic policy to quell the crisis: the struggle for food self-sufficiency and export promotion.

4.1 - Benefits of MARS Project to Imports

The MARS project strengthens the country's availability of foreign exchange thus allowing the importation of commodities required for the recovery of the national economy.

It encourages farmers to save by facilitating access to essential equipment and encourages semi-mechanization and farm produce collection using FORD tractors and light trucks.

Likewise, firms excavating and building roads are motivated to bid on large road or agricultural development projects since they can rely on the availability of CATERPILLAR Spare Parts and thus maintain their heavy equipment. The large foreign road building firms thus re-export their costs since they pay for spare parts in local currency. In this context, local firms and companies compete for agricultural rehabilitation and roadwork infrastructure contracts since the lack of foreign exchange no longer constitutes an obstacle nor a constraint.

In addition, the system installed for management of the MARS project funds helps the national economy to mobilize and keep rational control over foreign currency for the financing of investment in key sectors. The MARS project thus avoids foreign currency wastage and offers a guarantee for use of foreign currency in priority sector investment. Harnessing the savings of average and wealthy farmers as well as large road building or mining companies and directing monies towards development projects in poor rural areas to assist small scale farm enterprises is part of the redistribution of earnings and could be considered as a compensatory or accompanying measure in the structural adjustment process. This operation is made possible through payment to the Counterpart Funds of monies received due to the importation of eligible commodities under the MARS project.

4.2 - Breakdown of Import Costs

By purchasing foreign currency for imports without being subjected to the Liberalised Import Regime (LIR), the cost of importing MARS commodities is reduced. In fact, the cost is not affected by fluctuations in the consumer satisfaction rate under the LIR.

Whilst commodities such as tractors and light trucks are currently exempt from LIR, CATERPILLAR Spare Parts have to be processed under the LIR. As the MARS project guarantees the availability of foreign currency, it benefits from a specific funding which is applied at a standard rate of 50%.

According to a Sales Representative of HENRI FRAISE Fils et Cie, the cost of spare parts provided under the MARS project, submitted to LIR with specific funding, can be evaluated as being 10 - 15% cheaper than that applied under the LIR to foreign currency purchases.

Breakdown of import costs for MARS project commodities

<u>Item</u>	<u>Tractors</u>	<u>Light Trucks</u>	<u>Spare Parts</u>
F.O.B.....	100	100	100
C.I.F.....	116	133	127
Local expenditure.....	12	15	7
Customs.....	19	39	42
LIR.....	-	-	13
Cost price (store).....	147	187	189

Freight costs are felt at the C.I.F. stage (Cost, Insurance, Freight) due to the geographical distance of the island. Light trucks from the United States include "freight" and "insurance" charges of 33% of the F.O.B. cost whereas tractors from Europe only include 16%.

Customs dues make up a large slice of the cost price: approximately one third of the C.I.F. price for spare parts and light trucks.

Local expenditure is relatively high for tractors and light trucks (10 to 11% of the C.I.F. price). In fact, LANDIS includes therein financial charges of the order of 7 to 8% of the C.I.F. price. According to the Financial Director of LANDIS, his firm relies on a bank for approximately 80% of the value of equipment taken from Customs. This is provided through a short-term commercial loan with an annual

interest rate of 24 to 25%. With an estimated average time lag of three months until the sale, the firm can reimburse this loan at a three monthly rate of the order of 6%.

On the other hand, local expenditure for HENRI FRAISE Fils et Cie is reduced since this firm meets all debts through 100% self-financing.

The following profit margins are added to the cost price:

- Between 20 and 40% for spare parts as an inverse function of the client's purchase volume
- 21% for tractors
- 15% for light trucks.

Finally, the fully tax inclusive sales price should include the 15% T.U.T. (Taxe Unique de Transaction) (Single Transaction Tax). In this regard, agro-industrial and mining companies are able to recoup this 15% when making out their clients' bills but individual farmers may not be able to do the same since the farm produce market works on the Law of Supply and Demand principle and this generally does not take account of this tax.

Thus, the sales coefficient (fully tax inclusive) for an F.O.B. price value 100 reaches:

- 205 for tractors
- 247 for light trucks
- 265 for spare parts (average profit margin of 22%).

4.3 - Problems raised by the recent increase in the selling price of imported commodities

The sales coefficients show that for tractors the F.O.B. price is doubled, for spare parts almost tripled and for light trucks falls between the two.

The dollar rate on the invoice date also affects this price differential.

Therefore the last devaluation in July 1987 (55%) was strongly felt at the selling price stage.

Movement in sales price of FORD tractors and light trucks
under the MARS project
(in thousands of FMG)

<u>Type</u>	<u>July 1986</u>	<u>Aug. 1986</u>	<u>July 1987</u>	<u>Aug.</u>
1. Small FORD tractor 3910/47 HP DIN	11,653	13,000	-	28,5
2. FORD tractor 4610/62 HP DIN	13,000	-	-	31,0
3. FORD light truck	-	-	19,000	30,5

Between July 1986 and October 1987, tractor prices increased between 139% and 145% as against 65% for light trucks in just one month: from July to August 1987.

The tractor price has almost tripled and the light truck price doubled. However, it is in terms of nominal value deviance that the increase becomes alarming:

- For the same kind of goods, the tractor purchaser in August 1987 must pay 18 Million FMG (14,000 US dollars) more than in July 1986
- For the same kind of goods, the FORD vehicle purchaser in August 1987 must pay 11 Million FMG (11,500 US dollars) more than in July 1987, only one month before.

In fact, the LANDIS Company is left free to fix the selling prices. However, this freedom has been limited by the large increase brought about by the last devaluation.

This increase is having a very detrimental effect on the sale of the second batch of 50 light trucks; delivery was taken in September 1987 and to date only 15 of these have been sold.

Similarly, in the case of CATERPILLAR spare parts, the direct beneficiaries interviewed complained about their high cost. It should be remembered that the sales coefficient already reaches 265% of the F.O.B. price.

The management of HENRI FRAISE Fils et Cie, nevertheless, point out that competition does exist since large firms can purchase CATERPILLAR spare parts directly through their Head Offices or field agencies.

Such direct routing only saves them 5%. Furthermore, in addition to the loss of foreign currency, the firms incur storage and re-use expenses and waiting on delivery could incur immobilization costs.

The Management of HENRI FRAISE Fils et Cie have not failed to stress the benefits which the MARS project provides:

- The recycling of foreign currency is quite short-term since the imported spares are used directly
- Orders are precise thus minimizing additional administrative costs for warehousing and stocking
- Breakdowns can be handled out of stock and even if the spares are not available on the spot, delivery time on orders is satisfactory
- The price of spares provided under the MARS project can be estimated at 10 - 15% cheaper than that applied under the LIR to foreign currency purchases
- The MARS project covers between 70% and 80% of all spare part orders.

These benefits can continue despite the increase in the price of spare parts insofar as the economic operators involved have considerable financial means at their disposal and can count on important clients downstream: The Malagasy State, Donors, foreign importing companies....

Nevertheless, the commodity price increases could wipe out the main aims of the MARS project, particularly regarding farm tractors.

In fact, the struggle for food self-sufficiency requires maintaining and intensifying semi-mechanization of Malagasy agriculture; this is for two main reasons:

- Use of tractors aids in rapid expansion of the cultivated area, thus increasing the agricultural potential
- Involving farmers in semi-mechanization forces them to intensify cropping methods to reach maximum yield.

The interaction of these two phenomena should rapidly revive agricultural production and create employment opportunities in rural areas.

This theory, however classic, will be considered in the light of the results of the survey of direct beneficiaries of FORD tractors.

Whatever the case, access to the tractors and light trucks currently on sale remains a problem for farmers. This problem seems even more worrying when it is known that it is the individual farmers who use tractors in direct agricultural production, more precisely in the field of food crops.

5 - COMMODITIES IMPORTED PRIOR TO NOVEMBER 1986

5.1 - The purchasers: geographic location, status, type of use

As previously specified, the commodities imported prior to November 1986 are the following:

- 52 FORD tractors
- CATERPILLAR Spare Parts

5.1.1 - FORD Tractors

The distribution of purchasers according to their status and geographical location served as the sample basis in studying the direct beneficiaries of tractors.

The majority of purchasers are in the private sector and are concentrated in Taomasina province.

This area contains 60% of the tractors and in particular Lake Alaotra (Ambatondrazaka and Amparafaravola Districts) which have 21 of the 52 tractors, and 40% of the vehicles.

Furthermore, 34 of the 52 tractors have been purchased by the private sector, i.e. 65% or two out of every three tractors.

Distribution of tractors imported prior to October 1986
by region, sub-region and category of purchaser

REGION FARITANY	SUB-REGION FIVONDRONANA	SECTOR		TOTAL	
		PRIVATE	PUBLIC		
Antananarivo		6	1	7	1
	Antananarivo I	4	1	5	
	Milarinarivo	1	-	1	
	Tsiroamandidy	1	-	1	
Antsiranana		-	6	6	1
	Ambilobe	-	6	6	
Finarantsoa		-	-	-	
Mahajanga		1	-	1	
	Marovoay	1	-	1	
Toamasina		20	11	31	6
	Toamasina I	-	7	7	
	Ambatondrazaka	9	3	12	
	Amparafaravola	9	-	9	
	Moramanga	-	1	1	
	Tsaratanana	1	-	1	
	Maroantsetra	1	-	1	
Toliary		7	-	7	1
	Toliary I	3	-	3	
	Ambovombe	2	-	2	
	Morombe	2	-	2	
AGGREGATE		34	18	52	10

97% of the direct beneficiaries in the private sector are located within the provinces of Toamasina, Toliary and Antananarivo. In the public sector, 94% of direct beneficiaries are found in the provinces of Toamasina and Antsiranana.

Almost all private farmers use their tractors in direct agricultural production, to be precise for food crops such as rice. In the public sector, on the other hand, parastatal companies mainly use tractors for the collection of cash crops such as coffee, cloves, pepper.... and also in the agro-industrial field for transporting sugar cane. In short, the public sector uses tractors mainly as a means of transport though, in fact, the branch of "transport" concerned is closely linked to agriculture.

5.1.2

CATERPILLAR Spare Parts

The basis of sampling for the study of direct beneficiaries of spare parts was the list of purchasers up to 30 August 1986 showing their distribution by amount purchased in relation to the total value of spare parts sold by HENRI FRAISE Fils et Cie.

From this list, the following purchaser characteristics emerge:

- a) 5 companies or firms have made purchases representing 92% of the turnover of HENRI FRAISE Fils et Cie.

The distribution is very irregular and concentration very marked:

- 4 companies (COLAS, KRAOMA, SNTP, GALLOIS) whose purchase volume varies between 10 and 30% of the turnover are responsible for a concentration of 65% of the total value of purchases
- 2 companies (SIRAMA, SMBCE) are on the fringe with between 5 and 10% of the turnover and covering 15% of the total value of purchases.

These six large companies alone cover 80% of the total value of purchases.

Thus, over 10 companies share the remainder i.e. 20% of the total value of purchases.

- b) The 15 companies mentioned above operate throughout the Island but a very strong majority have their Head Office in Antananarivo.
- c) Three sectors predominate in the use of spare parts. In descending order of purchasing value, these are: road works (41%), agriculture and agro-industry (26%) and mining works (25%).
- d) The private sector is strongly represented among purchasers since 11 companies (74%) out of these 15 are linked to it.

5.2 -- FORD Tractors - Direct Beneficiaries

5.2.1 - Characteristics of direct beneficiaries

After designation of the primary sample by the quota method, the proportion of private purchasers in the target population for the study is 7 out of 10.

In fact, 12 DBs were observed of which one is a retailer and the other non direct users. This concerns a transport company and a farmer in Tulear.

The Director of this transport company bought three FORD tractors (one under the MARS project) but two have been sold to a member of his family with an 800ha farm holding in Bekily and the other to a farmer in Ambatondrazaka.

The farmer in Tulear has entrusted his tractors to a member of the family living at Morombe.

Without control, the MARS project could become a source of speculation in agricultural equipment.

For all these reasons, these two units have been purely and simply excluded from the analysis of the results of the survey.

Thus, our final sample is composed of three DBs from the public sector and seven from the private sector of which five are individual farmers, one a farming family and one an agricultural enterprise (T. 1.1).

5.2.1.1. - The private sector

The direct beneficiaries in the private sector are mainly located in the central zone:

- 2 in the District of Amparafaravola (Tamatave)
- 3 in the District of Ambatondrazaka (Tamatave)
- 2 in the District of Tsiroanomandidy (Tananarive)

Most of the time, these seven are direct users (T. 1.1).

The 5 farmers are all male, 3 of whom are in the 35 to 49 age bracket, 1 in the 20 to 34 age bracket and 1 in the 50 to 69 age bracket. The age factor emerges as a constraint in the acquisition of a tractor. The cost makes considerable savings a pre-requisite, be it property (land...) or cash savings. Financing from one's own funds whether in total or with a partial bank loan could be through a legacy or savings on income. Whatever the case, the minimum age to be able to purchase a tractor is quite high.

Here lies the paradox; since the use of a tractor implies an agricultural investment if not long-term at least medium-term, with a view to working on a wider scale thanks to the modernization of cropping techniques. Farmers who are too old to be sure of reaping the fruits of their efforts in their old age could be discouraged by such a long term operation. In addition, there is the rural exodus by the young people and the fragmentation of farms under the Malagasy inheritance system.

It would therefore be interesting to set up a system by which young farmers could acquire tractors within the scope of agricultural modernization.

In fact, of the 5 farmers, only 3 had farming as their principal activity. The other two worked in the rice collection and road building fields, one as a high-level executive and the other as an independent employer. However, their secondary activities resulted directly from the use of tractors: direct agricultural production, transport of firewood, collection of farm produce.

The farming family comprises 16 members working in association and each possessing between 2 and 3 ha of land. Their farmholding is at Amparafaravola.

The private agricultural enterprise belongs to a denominational group dealing with rural youth training at an apprenticeship center which has an annex for on-the-job training in the mid-west at Tsiroanomandidy.

5.2.1.2 - The public sector

The parastatal companies surveyed are SIRAMA (Ambilobe), the OPERATION CAFE (Toamasina) and FANALAMANGA (Moramanga).

The SIRAMA sugar complex cultivates sugar to supply its factories. The OPERATION CAFE is involved in production of coffee plant cuttings and coffee and clove plants. FANALAMANGA is a large forestry development aimed at the creation of a paper pulp factory.

5.2.2 - Type of land use by direct beneficiaries

Whereas the public sector owns large concessions reaching 90,000 ha (FANALAMANGA), farmers on the other hand particularly in the central zone, do not have areas large enough for tractor use easily at their disposal..

Overall, the rate of use of available land reaches 78% in the private sector for an average available area of 156 ha belonging to the direct beneficiary.

In the central zone, individual farmers own an average area of 42 ha and also farm another 13 ha area which does not belong to them.

Three types of land use were encountered during the survey for this back-up land: sharecropping, rental and free occupancy.

The fragmentation of family farmholdings has led to insufficiently large areas being available for tractor use. This has forced them to resort to sharecropping on the basis of a half-and-half share with the owner of the land.

Tenant farmholders, on average, own 42 ha of land and rent an additional average area of 17 ha: i.e. 30% rental rate by area.

For all the farmers sampled living in the central zone, this rental rate is 17% of area.

Rental costs reach 150,000 FMG per hectare cultivated per agricultural campaign.

In fact, tractor utilization forces the owner to extend the land area worked with a view to increased profitability.

5.2.3 - Tractor acquisition means

Purchasers were made aware that tractors were being put on sale either through contacts with the Company or by advertizing in general. The latter, however, does not seem well developed yet since it only reached 40% of the direct beneficiaries.

Only certain individual farmers had to go into debt to acquire tractors. Neither the farming family, the private company nor the parastatal company made use of farm loans.

Overall, only 13% of the cost of the tractors was financed by bank loans. In fact the sample covered 21 of the 52 FORD tractors i.e. 40%.

For the farmers in general, 52% of the tractor costs were met through bank loans, the remainder were paid for from own capital.

The survey showed the duration of bank loan recovery to be minimum 40 months and maximum 60 months with monthly repayments varying between 267,000 FMG and 300,000 FMG.

It should be noted that parastatal companies acquiring tractors are over-represented in the sample (67%) even though these companies are in the minority (30%) as direct beneficiaries. They are able to purchase several FORD tractors at once due to their Treasury position.

The three parastatal Companies alone have a fleet of 253 tractors of which 129 are still in good condition, i.e. 49% withdrawn from the fleet. For the private operators, this rate is quite low (about 12%): for a fleet of 17 tractors, 15 are still in good condition.

Various makes of tractors were observed during the sample survey: Massey Ferguson, Hanomag, John Deer, Belarousse... and of course, FORD.

Farmers purchase new additional tractors on average every 7 years.

5.2.4 - Tractor utilization

Tractors are mainly used as a means of transportation by the parastatal companies: collection of farm produce, staff transportation, transport of farm inputs. On the other hand, the private sector uses them in direct agricultural production (ploughing, spraying, treading as required for food crops such as rice, maize, cassava, beans, onions...).

In fact, tractor utilization by the owner was more intensive in the private sector than the public sector over the last 12 months. Overall, the sample gave an average utilization of 7.7 months per agricultural enterprise over the last 12 months: 9 months in the private sector against 7 months in the public sector (See Table T.1.5).

Secondary utilization of the tractor as a means of transport is mainly found in the private sector. This accounts for 1 month out of every 3 months' utilization of the tractor by the owner.

The busiest period occurs between October and the following January. Then the great majority of enterprises utilize their tractors for 4 weeks per month with a weekly volume of 50 - 100 hours. This season corresponds with the main agricultural work.

During the off-season which extends from February until September, tractors are only used for an average 12 hours per week.

Nevertheless, from March to June, tractors used in agricultural produce collection are working at full speed.

We should note that maintenance problems become crucial to tractors working around the clock 6 days a week such as those of the SIRAMA during sugar collection (May to November).

During the remainder of the time when the tractor is not being used by its owner, it is either rented out, lent free-of-charge, or stationary. In the private sector, the time rented out is as long as the time stationary: 1.5 months during the last 12 months. Sometimes, the tractor is lent free-of-charge to members of the family as a means of transport: agricultural produce collection and transport of agricultural inputs.

Across the sample as a whole, an average of 10 persons per enterprise were able to rent FORD tractors. 90% of these lessees were farmers. They were mainly owners of average or small-sized holdings. Is this not an indication, along with the many others we have seen, of the high demand for tractors in rural areas?

5.2.5 - Estimate of the annual operating income of a farmer using a FORD tractor over the last 12 months

To facilitate the estimate of the various items, it seemed safer to assess only those farmers whose data proved most reliable. After a plausibility study (fuel cost/machine hour) and a coherence test (gross receipts/cultivated areas), the four farmers from the central zone were finally selected.

The operating figures annexed in Table 1.6 thus correspond to an average individual farming enterprise in the central zone with an area of 36 ha of food crops worked by one FORD tractor under the MARS project.

The turnover during the last 12 months is estimated at 14,700,000 FMG of which 57% comes from direct agricultural production, 21% from tractor rental and 22% from receipts for transport provided using the tractor.

Intermediary consumables represent 28% of the turnover, the greater part of which is for seed and fuel purchases. The latter covers approximately half of the intermediary consumables.

Added value is estimated at 10,600,000 FMG of which 20% is paid as salaries, 8% for fixed costs, 12% in financial charges and 23% annual depreciation.

The operating figures thus provide an annual operating revenue of 3,950,000 FMG i.e. 37% of the value added and 27% of the turnover.

The calculation of this annual operating revenue requires certain clarification:

- a) the 1986/87 agricultural campaign saw a drop in the producer price for most food crops.

Producer price for food crops revealed by the survey
for the 2 last campaigns
(In FMG/Kilo)

Product	March 86	March 87	Reduction (%)
Rice	200	120	40
Maize	175	40	77
Cassava	50	30	40
Beans	300	300	-
Production Value Index	100	114	(+ 14%)

Nevertheless, the production value has increased since the expansion of the area and the improvement of yield have offset the price decrease. The deflated production value was finally reduced since the inflation rate is much higher than this nominal 14% increase.

- b) the depreciation rate could seem rather low but if applied to the discounted present value of the tractor, this would have created disproportion in the accounts.
- c) if the current agricultural production prices are maintained, the average enterprise under study could become insolvent in respect of its creditor (bank) with annual loan recovery varying between 3,200,000 FMG and 3,600,000 FMG; additional information is given in the Annex (Tables T.2.11.b and T.2.12).

5.2.6 - Socio-economic impact of tractor utilization by direct beneficiaries

As we have stressed previously, FORD tractors are used either for direct agricultural production or as a means of transport.

These tractors can also be used when immobilized during the off-season as engines for water pumping, for electricity generation, and for husking. Though these constitute only marginal utilization, it is useful.

The survey data confirms our theory on the interaction of the expansion of area and the improvement of yield brought about by the use of the tractor.

Taking the farming family as an example, their rice cultivation area has increased from 40 ha to 60 ha from 1986 to 1987 and their rice yield has doubled, going from 1.5T/ha to 3 T/ha. Thus, their rice production has tripled from one year to the next: 60 Tons in 1986 against 180 Tons in 1987.

Moreover, this expansion of area develops "sterile" land either through share cropping, renting or occupation free of charge.

Increasing the area then entails increasing the labour force which is beneficial to the employment situation in rural areas, particularly with regard to women for re-planting and weeding work and also the poor who can earn salaries. This process has been observed in most of the operations surveyed.

Furthermore, this income creation is not contradictory to work time reduction which frees part of the labour force for other related occupations (trade, catering, arts and crafts). The utilization of the tractor thus contributes not only to promoting employment but also to improving labour force productivity. (See Tables T.2.4., T.2.7, T.2.11).

Finally, strict adherence to the crop planning calendar ensures a higher yield for direct beneficiaries and tenants.

In the social field, the presence of the tractor in a region slows down the rural exodus in two ways: through job creation and through increase in agricultural income. In this regard, young graduates who come from rural areas will return to the land insofar as the possibility of modernizing cultivation methods for better yields offers them social advancement (See T.2.5, T.2.10). The case of the farming family in our sample showed that regrouping of land divided into plots with a view to higher productivity becomes possible with the use of the tractor. The tractor thus has an implicitly favorable impact on the family unit which is more and more disrupted in the context of the current crisis: family cohesion becomes stronger, the protection of women and the poor is ensured, and the traditional Malagasy culture is respected. An eloquent example of this observed within the sample is the loaning of the tractor free of charge to members of the family. Similarly, the use of the tractor as a means of transport for evacuating the sick, for use at burials and also tractor rental to improve the agricultural production of other farmers are all favorable factors towards the establishment of community solidarity.

As a means of transport, the tractor also provides economic benefits to the the direct beneficiary. The agro-industrial branch benefits a lot in produce collection. Such use of the tractor is sometimes directly linked to export activities: sugar, coffee....

It makes up for the lack of roads in rural areas and contributes to the promotion of agricultural produce commercialization.

It reduces transport costs and therefore also the cost price of agricultural produce whilst increasing commercialized production. The tractor thus plays an essential role in the process of rapid monetarization of rural areas which is a determining factor in removing the auto-subsistence economy and establishing new social attitudes to production which are favorable to the permeation of progress.

To the farmer, the tractor as a means of transport, represents an additional source of income during the off-season. He can collect his own produce and is therefore freed from domination by professional collectors concerning producer price fixing.

Similarly, supply of agricultural inputs to his holding is facilitated.

Finally, it provides some security for the farm by replacing draught oxen (carts, ploughs) which are often coveted by "dahalo", cattle thieves.

Along with these numerous advantages, there are two major disadvantages in the utilization of tractors:

- a) their exorbitant cost which is difficult to "manage" in view of the climatic risks and agricultural price fluctuations;
- b) the problem of maintenance for farms situated long distances from after-sales service centers.

Nevertheless, these disadvantages will not discourage the strong demand which has been expressed with great insistence by the farmers from the Mid-West and Lake Alaotra. Despite the recent price increase, if the bank loan system could be relaxed and some favorable measures taken towards stability in agricultural prices to the producer, they are keen.

5.3 - FORD Tractors: Indirect Beneficiaries

5.3.1 - Indirect Beneficiaries: location, activity, status

As specified in the sampling, the indirect beneficiaries of tractors cover 28 households (See Table 2.1). Ten (10) of the units surveyed are in the public sector and 18 (or 3/5) in the private sector which, in fact, is the main user of FORD tractors. The same Table 2.1 shows that the majority of units in the sample work in the food crop field (2 in the public sector and 15 in the private sector) concentrated in the areas of semi-intensive rice cultivation such as Lake Alaotra and Tsiroanomandidy. Finally, the most usual relationship with the tractor owners i.e. the direct beneficiaries, are of two kinds since the group surveyed is mainly composed of employees (17) and to a lesser degree tenants (3). Nevertheless, 3/5 of the sample are employees or laborers and thus nearing the poor categories that the MARS project wished to target (See Table T.2.11 for an estimate of their numbers).

5.3.2 - Indirect beneficiaries: socio-economic characteristics

According to Table 2.2, 80% of the indirect beneficiaries are aged between 20 and 50 years and are at an active age.

One (1) indirect beneficiary out of eight (8) is a woman. Though, in general, the men are married, 2 out of every 3 women is a widow (See Table 2.3). However, whatever the matrimonial status of the head of the household, the average size of the household is 5 persons i.e. that which is found in rural areas of Madagascar.

Table 2.4 provides information on the monthly income of the households surveyed which is 130,000 FMG. One third of this income comes from the wife's work since the man's portion is 95,000 FMG and the woman's 49,000 FMG.

It should be noted, furthermore, that 3 out of every 5 wives work and, generally, do so for themselves. This gives credence to the idea that the days of the "woman in the home" is beginning to become a thing of the past.

Two important comments should be made on this Table 2.4:

- The average household income here is higher than the average for Malagasy rural areas in general(3), without doubt due to the fact that the use of tractors by the man (wage-earner or renter) allows the wife to work for herself;
- Those who work for themselves earn more than wage-earners (140,000 FMG against 65,000 FMG).

Finally, the survey shows that the educational level of the sample units is quite high (See Table 2.5): 74% of the men interviewed and 45% of their wives had attended secondary school whilst 10% of the men and 10% of the women had had higher level education. This data demonstrates spectacular advances in schooling but also the extent of intellectual unemployment which urges young graduates from rural areas to return to the land as long as they have the possibility of access to modern equipment (See Tables T.2.5 and T.2.10).

Two kinds of benefit can already be identified concerning indirect beneficiaries:

- The possibility for the household to adopt an economic strategy which is proving fruitful, that is to say, with the man providing stability of income by becoming a wage-earner and the woman using the income thus made available to take a risk and attempt to exploit the land;
- The return of young rural graduates to agriculture.

We will deal with this further below.

5.3.3 - Tractor use by indirect beneficiaries

The sample revealed that one quarter of wage-earners own 70 ha of land or more and that this area is only worked by FORD tractors. However, one wage-earner in 5 has not made use of the services of FORD tractors.

At this point, it should be stressed that the indirect beneficiaries who have made use of the services of FORD tractors own an average area of 42 ha which is, in fact, the minimum size required for semi-mechanization. On the whole, these so-called indirect beneficiaries are potential purchasers of FORD tractors if offered loan possibilities (See Table 2.6).

(3) This average is approximately 25,000 FMG.
(Source: UNICEF-MPJS, May 1987).

Furthermore, Table 2.7 shows that:

- Half the indirect beneficiaries have access to FORD tractors as employees. As such, they are allowed to work 1 ha of land free-of-charge and for the remainder they must rent the tractor;
- 9/10 of the indirect beneficiaries interviewed have access to FORD tractors either as employees or as renters (minimum 11 individuals). The majority of renters have rented more than two tractors and some (30%) for more than 24 hours. This means that demand is strong in areas where a FORD tractor exists. This is the case in the area of Tsiroanomandidy in particular.

5.3.4 - Socio-economic benefits offered by FORD tractors to indirect beneficiaries

The introduction of a novelty in any given area is never accomplished without difficulty and inconvenience. By necessity, it destroys certain ways of life, certain customs which are more or less part of the identity of the receiving population.

In the case of FORD tractors, this inconvenience is mainly of a social nature: social divisions are accentuated and conflict between groups exacerbated. Without doubt, those acquiring tractors are in high enviable social positions and some take the opportunity to flaunt their wealth.

Nevertheless, our survey revealed that the presence and utilization of a FORD tractor offered many economic and social benefits which largely compensate for the inconvenience(4).

In general, these benefits are felt by both direct beneficiaries and indirect beneficiaries.

In the economic field, the utilization of a FORD tractor allows the:

- increase of cultivated area and yield and improvement of methods of cultivation;
- multiplication of connected activities through increase in production (e.g. husking plant);

(4) The observations made here and on the following page only concern the private sector since the public sector uses FORD tractors mainly for transport of products and does not rent them, in addition to the fact that these tractors often only represent a small part of the fleet available in this sector.

- creation of new jobs for the young and for women, both categories targetted by the MARS project;
- freedom of the rural labor force which has been dominated by the land owners for a long time, since share croppers can now either rent a tractor or become wage-earners.

In the social field, the utilization of a FORD tractor:

- brings about a sense of greater security for the producer both from the food point of view and from the point of view of law and order in that when the tractor replaces oxen, the fear of oxen being stolen is removed;
- creates a new kind of social cohesion since, in some places, the community can use the tractor on domanial land and use the produce obtained to subsidize wages for health assistants and teachers;
- helps the collectivity in a health emergency, particularly during the wet-season when the tractor is used as the main means of transport, even as an "ambulance".

On this theme, the majority of units surveyed consider that the benefits offered by the FORD tractor are great and permanent.

One person interviewed in 5, however, thinks that the benefits are insignificant and transitory. The signs are that these persons, in general, are on bad terms with the tractor owners (See Table 2.9);

MAP NO. 2

AREAS COVERED BY DIRECT BENEFICIARIES OF SPARE PARTS
1985-1986

5.4 - CATERPILLAR Spare Parts: Direct Beneficiaries

5.4.1 - Direct Beneficiaries: location, status, domaines where spare parts used

5.4.1.1 - Location: Districts and/or territory covered

Despite the diversity of domaines covered, all the sample units have their Head Offices in Antananarivo except for REFRIGEPECHE-OUEST whose Head Office is in Mahajanga. Almost all cover if not right across Madagascar at least more than one District. Some even extend their coverage overseas (U.S.A., Europe...) in exporting their products. Such is the case of SIRAMA and REFRIGEPECHE-OUEST for example. Table 3.1 gives details of areas covered and Map No. 2 shows the areas.

5.4.1.2 - Status and domaines of activity

As intended, our method of work has included in the sample studied the two most important sectors of the economy: the private sector which includes four (4) companies and the public sector which includes three (3).

However, considering the volume purchased from the primary operator, it seems that the private sector is by far the largest user of CATERPILLAR spare parts. This can be seen in Table 3.2 which will comment upon in the next section.

As to the domaines of activity, these can be divided into primary domaines and secondary domaines, the former are used naturally to identify the companies. The units of our sample are distributed in the following manner and in order of importance by purchase volume:

- Road building.....3 companies
- Agro-industry.....2 companies
- Quarries and excavation.....1 company(5)
- Industrial fishing.....1 company

Total.....7 companies

Furthermore, it should be noted that none of these companies restrict themselves to one activity but are involved in one or several secondary activities which complete or put the finishing touch to their primary activity. Among these secondary activities, let us draw attention to the exporting which they carry out directly or indirectly.

(5) The KRAOMA Company (Mining Works) should have been interviewed but the management refused.

The two SIRAMA companies export sugar to the U.S.A. and the EEC countries (17,000 T/per annum) and through bilateral assistance benefit from a preferential tarif. This is also the case for REGRIGEPECHE-OUEST who export to Europe all the prawns they fish in Malagasy territorial waters. The importance to the Malagasy economy of foreign exchange made available by exports of this kind is self-evident.

To a lesser degree, other companies also contribute indirectly to export as well as working for local production and consumption. Thus the SMCT works for the good of road building and agriculture among other domaines whilst Companies or Public Works organizations (COLAS, SNTP, MPW) assist in agricultural production and circulation of produce by building and/or repairing roads. At the bottom line this means that, without this basic "ground-level" work, production for internal consumption and even more so for export would become almost an impossibility. It is not so very long ago that bad road conditions discouraged farmers - who found themselves cut off - and put off even the most hardy of produce collectors. Such a phenomenon was a decisive factor in the reduction of production both for internal consumption and for export.

From what has been developed earlier, it transpires that the companies in question are apparently quite unrelated, they are however totally inter-dependent. Furthermore, in ensuring production development for local consumption, they are also contributing in one way or another towards production development for export.

It is obvious that none of these companies could have functioned normally without CATERPILLAR Spare Parts. It can therefore be stated, without any exaggeration, that the role of CATERPILLAR equipment is vital to the current Malagasy economy in general and to agricultural and related activities in particular.

5.4.2 - Methods of payment for CATERPILLAR Spare Parts: total amounts purchased, methods of payment, sources of funding

5.4.2.1 - Total amounts purchased

Taking the month of August 1986(6) as reference point, we note from Table 3.2.a that:

- The private sector is definitely the main user of CATERPILLAR spare parts: approx. 3,000,000 X 1,000 FMG prior to August 1986 and approx 4,000,000 X 1,000 FMG after August 1986; in other words, the private sector purchases ten times more than the public sector (326 X 1,000 FMG prior to August 1986 against 377 X 1,000 FMG after August 1986);

(6) 30 August 1986 corresponds with the end of the financial year at HENRI FRAISE Fils et Cie.

- The volume of purchases has remained constant, or almost constant, for some companies during the two periods (e.g. SNTP, SIRAMA - Namakia, and also SMCT, SIRAMA - Ambilobe...). This means that following the devaluation (July 1987), in particular, they have purchased a smaller quantity of spare parts with a more or less stationary budget. To be explicit, they have cut back their "needs", no doubt at the expense of their performance and often taking the risk of not following the constructor's standards and reducing the capacity of their CATERPILLAR equipment.

5.4.2.2 - Methods of payment

During the periods considered, the method of payment most used was direct cash payment (See T.3.2.b).

In certain cases, however, HENRI FRAISE Fils et Cie can give short-term credit - from 1.5 to 3 months - if so requested by companies who meet their conditions. Of the seven units in our sample, only two took advantage of this measure. Does this mean that the importing company's conditions are relatively strict? This would appear to be the case if the information given by interviewees is to be believed...

5.4.2.3 - Sources of funding

Even cursory analysis of the survey data shows that, with the exception of one State body (MPW, the Ministry of Public Works) which has recourse to international financing(7), all the companies practice self-financing (See T.3.2.b).

Another avenue is open to a company such as COLAS who cover the cost of spare parts from foreign currency advances.

What can this mean? It raises some serious questions concerning the role played by banks in the financing of such a vital sector as equipment and spare parts needed in agricultural rehabilitation support.

5.4.3 - Employment linked to the use of CATERPILLAR equipment

Table 3.3 gives an insight into the structure of employment linked to the use of CATERPILLAR equipment as well as its development during the periods considered.

(7) This could also be the case of SIRAMA who benefit from CCCE loans

5.4.3.1 - Employment structure

Three statements should be made at this point:

- The utilization of CATERPILLAR equipment provides an opportunity to create jobs for the poorest categories insofar as workers and laborers represent between 60% and 93% of the personnel across all sectors;
- The private sector is once again the largest employment creator: 664 against 452 for the public sector prior to August 1986 and 814 against 547 for the public sector since August 1986;
- Road building-rehabilitation is by far the activity requiring the most hiring.

To sum up, analysing the employment structure as it appears here, we obtain a wide-based pyramid with a more or less tapered summit. The workers (the base) represent the great majority of personnel, mid-level administrators - far less numerous - form the body and the high-level management represent a tiny minority forming the summit.

5.4.3.2 - Evolution of employment and work load

On the whole, employment in the different activities under study is quite stable; as is shown in Table 3.4. This is particularly the case for quarries and excavation (SMCT), industrialized fishing (REFRIGEPESCHE-OUEST), agro-industry (SIRAMA-Namakia), and road building (SNTTP).

Exceptions to this stability, for reasons related or unrelated to the use of CATERPILLAR equipment, are found at SIRAMA-Ambilobe whose lower level staff has been reduced and COLAS and the MPW whose lower level staff have been considerably increased (25%).

Furthermore, it is interesting to note that whereas the number of administrators is being limited and kept stable in the private sector, the tendency in the public sector is towards increase (particularly in the case of MPW).

Coming back to the problem of evolution of employment, outside the field of road building, one can only report a fundamental instability due to a great extent to the erosion of the economic environment.

We therefore conclude that in the short and mid-term, it is road building using CATERPILLAR equipment once again which could have the most favorable impact on employment, particularly through the use of HIL methods.

In parallel with these different statements, we could make one other which emanates from Table 3.4, namely: if one company has registered a fall in work load, another admits that his has stagnated and five others state that their work load has increased.

Two apparent anomalies require explanation at this point:

- On the one hand, the increase in number of jobs correlated with the stagnation of hourly work load (Case 1);
- On the other hand, the stagnation of number of jobs correlated with the increase in hourly work load (Cases 2, 4, and 5).

The first "anomaly" is without doubt due to a high rate of equipment failure whereas the second could either be due to the adoption of a salary policy by the employer or due to an improvement in fleet maintenance.

5.4.4 - Assessment of the benefits to each socio-economic category

Several categories of beneficiaries gain from the use of CATERPILLAR equipment. The first category is the purchasers of spare parts who are also in the employer category. All these beneficiaries, called direct beneficiaries herein, recognize the fact that without the CATERPILLAR spare parts they "would have shut up shop" long ago. Therefore, the first type of benefit, and by far the most important, is the life or sometimes the survival of the company.

The second category of beneficiaries is the personnel employed by these companies: workers and administrators. If we take it that the 7 companies or bodies analysed here are representative unit-types for all the 15 companies which are responsible for 92% of the purchase volume of the importing company, then we can calculate that the average number of (poor) workers per company is 210. For these 15 companies, we would have 3,200 workers directly linked to CATERPILLAR equipment. Thus, estimating the average size of a worker's household as 5 persons, we have 16,000 people benefitting from the use of the equipment in question.

As to the benefits, these are of three kinds:

- benefits in money (salary, allowances, bonus..)
- benefits in kind (lodging, transport, electricity, water.... in some companies);
- services (access to schooling, medical attention..) provided by the company.

Obtaining these benefits is essentially conditional upon the company running well which in turn is directly related to the state of their CATERPILLAR equipment.

The third category of beneficiaries would be the local population who gain from roads being finished (produce dispersal, ease of communication, better access social services...), from the completion of a dam or public building, or even gain access to manufactured goods (sugar...), as shown in Table 3.5.

Identification of the areas covered by each company provides quite precise information as to the numerical size of this category of beneficiary which could encompass the great majority of the Malagasy population.

This means to say that the socio-economic spin-offs of the use of CATERPILLAR equipment can be considerable even if they are not very discernible; they affect a large portion of the actual Malagasy population and are also beneficial in other fields of activity which make up the national economy. This is particularly the case in the construction and rehabilitation of a road which is an undeniably positive action for: agriculture, commerce, industry, arts and crafts, socio-cultural activities..... We will go into the last two categories of beneficiaries further in the chapter dealing with indirect beneficiaries.

5.4.5 - Views and future prospects

Unanimously positive replies were given to the question of whether the direct beneficiaries were satisfied with the MARS project as well as the services offered by the importing company.

The MARS project came "just in the nick of time" at a point when the Malagasy economy was in need, more than ever, of a "breath of fresh air". Nevertheless, the needs of the population and the national economy are enormous whilst the possibilities offered by the project are limited which means that the benefits are difficult to discern even though they are very real.

All the direct beneficiaries also recognize the high quality of service provided by HENRI FRAISE Fils et Cie. However, they all had remarks to make about the prices charged which turned out to be too high, mainly since the last devaluation in July 1987.

5.5 - CATERPILLAR Spare Parts: Indirect Beneficiaries

5.5.1 - Indirect Beneficiaries: location, status and typology

5.5.1.1 - Location of indirect beneficiaries by sector and by field of activity

The "gradual" method adopted for this study requires that indirect beneficiaries only exist as related to such and such types of direct beneficiaries. Table 3.1, previously analysed, provides information on the status of indirect beneficiaries and the field of activity in which they are involved. This will cover the private and public sectors and the four main fields of activity (Roads, Agro-industry, Quarries, and Industrial fishing).

Still following Table 3.1, indirect beneficiaries can be found at the places where the companies they are connected with operate and also in the area or territory covered by the company. Geographically, they can thus be situated quite precisely and their numbers can be estimated quite easily by taking a census of staff employed and the population using or consuming the final product (See para 5.4.4, and at annex Table T.3.1.b).

5.5.1.2 - Typology of indirect beneficiaries

The preceding analyses show that there are two types of indirect beneficiaries:

- Primary indirect beneficiaries;
- Secondary indirect beneficiaries.

Primary indirect beneficiaries are firstly the workers linked with CATERPILLAR equipment utilization and their families, then the employees and administrators of the direct beneficiary company and their families. Table 4.1 shows that permanent workers are the most numerous (almost 50% of the staff), and that road building is the only field employing temporary staff and that which hires the most laborers (43%). This simply confirms the results of the above analyses.

As to secondary indirect beneficiaries, they can either be the local collectivities in the areas covered by the direct beneficiaries, or the consumers or users of the product (sugar, roads,....). Local collectivities benefit from the fact that a company always constitutes a "development pole", bringing with it various benefits both material and other. Consumers can get the products they want and users can get the services they need.

It is thus possible to identify precisely the primary and secondary indirect beneficiaries for each type of activity.

5.5.1.3 - Socio-economic characteristics of indirect beneficiaries

Tables 4.2, 4.3 and 4.4 provide information on primary indirect beneficiaries in particular since it was not possible to reach secondary indirect beneficiaries in the time available.

Analysis of Table 4.2 shows that the professional situation of primary indirect beneficiaries (husbands and wives) is very varied: 9 have no profession, 6 work for themselves, 1 is a sharecropper, 22 are wage-earners and 2 daily-paid workers.

As far as income is concerned, this Table is very eloquent:

- The income of those working for themselves is much higher than wage-earners;
- The average income of the wife is higher than the husband's.

These findings signify that, in the context of the current crisis, the modern sector is in difficulties and unable to meet the needs of wage-earners. This is not the case in the so-called "casual" sector. This could explain the skepticism of workers regarding the MARS project which we will go into below.

Still on the subject of income, Table 4.4 shows that the monthly income of 74% of primary indirect beneficiaries is situated between 25,000 FMG and 100,000 FMG, i.e. an average of 65,000 FMG. Based on the data of the OSIPD/UNICEF/MPJS survey (May 1987) of Vulnerable Groups in Madagascar, we can state that these primary indirect beneficiaries are at the limit of vulnerability and can be qualified as "poor"(8).

Finally, regarding education level, Table 4.3 shows that more than half the primary indirect beneficiaries (60%) are either illiterate or semi-educated.

5.5.2 - Types of benefits

We have distinguished two main types of benefits: direct benefits, and indirect benefits.

Direct benefits can be sub-divided into direct money benefits (salary, allowances, bonus) and direct benefits in kind (products...). It is mainly workers and employees (primary indirect beneficiaries) who benefit from such direct benefits.

(8) The threshold of vulnerability is situated between 50,000 and 60,000 FMG according to the results of this study.

As far as indirect benefits are concerned, these can be diverse and cover various fields. These could be certain material advantages: transport, lodging, provision of water and electricity at home - provided by the company and lightening the daily tasks which are traditionally "women's work" (drawing water, washing, etc...). One could also think of basic social services (free or subsidized medical attention, schooling, ...) made possible thanks to the direct beneficiary company, and, its CATERPILLAR equipment.

Another type of indirect benefit can come about through the secondary activity of the company. Proof of this can be seen in the rice cultivation being carried out by SIRAMA-Namakia in collaboration with the peasants in the surrounding area.

With an area of 750 - 1,000 ha at their disposal for rice cultivation, SIRAMA entered into a contract with the peasants who thereby committed themselves to handle the basic work on the rice fields against part of the crop at harvest time. SIRAMA provides fertilizer, CATERPILLAR plant for levelling, tractors for ploughing, and technical assistance in case of need. Using this system, a kind of "improved share-cropping", production is at 3.5 to 4 T/ha and, in general, the peasants are satisfied according to information gleaned on the spot.

In our view, this is a wonderful example of the indirect benefits to the local population due to the presence of a company whose life depends on CATERPILLAR plant and equipment.

Finally, one last type of indirect benefit is found in an end product, such as a road. Thanks to the rehabilitation of roads by companies (COLAS, SNTF, SMTF ...) or public bodies (the Ministry of Public Works and its outlying services), the local population can circulate more freely, move produce, lay in supplies, and have access to social services (schooling, health...).

5.5.3 - Views and future prospects

When asking the primary indirect beneficiaries in our sample about the qualities and faults of CATERPILLAR equipment and on the benefits gained, the replies were almost invariably:

- CATERPILLAR plant and equipment are among the best and strongest in the world;
- The life of their companies and even their existence depends upon this plant and equipment;
- The cost of renting CATERPILLAR plant is, however, quite beyond the means of an ordinary worker (almost 40,000 FMG/hour).

Consequently, whilst recognizing that the benefits brought by CATERPILLAR plant and equipment are permanent (11/15 individuals), the units surveyed were divided in assessing their scope: 6/15 feel that the benefits are great, and 8/15 that they are moderate or limited (Table 3.6).

6 - COMMODITIES IMPORTED SINCE NOVEMBER 1986

After November 1986, the sale of CATERPILLAR spare parts and a new batch of 17 tractors continued under the MARS project in addition to a further batch of 50 FORD light trucks.

It should be stressed that the commodities dealt with in this chapter were not affected by the recent devaluation.

6.1 - FORD Tractors

The LANDIS company took delivery of the new batch of 17 tractors in February 1987.

This batch is made up of more powerful tractors than in previous batches, i.e. FORD 6610 (82HP) and 5610 (72 HP).

72% of the direct beneficiaries are in the private sector and, within this sector, farmers are in the majority (62%). Once again, this shows the strong demand for tractors among farmers.

As in the case of previous batches, use by farmers is almost totally in direct agricultural production, mainly food crops and rice cultivation in particular. In contrast, tractor use by companies whether private or para-statal is principally as a means of transport for collection of farm produce which is often connected with agricultural production for export or industrial agricultural production: coffee, vanilla, palm oil...

Farmers have a preference for high-powered tractors (6610) whereas transporters and collectors are more drawn to less powerful tractors (5610).

These farmers have an average cultivated area of 52 ha varying between 30 ha and 70 ha.

The great majority of direct beneficiaries are located in the Districts of Ambatondrazaka (Toamasina province). The remainder are spread throughout the Districts of Morondava (2), Marovoay (1), Tsiroanomandidy (2) and Antananarivo (1).

The indirect beneficiaries of this last batch of tractors are mainly connected with farmers working in direct agricultural production: through renting or wage-earning.

Nevertheless, export activities have not been neglected.

6.2 - CATERPILLAR Spare Parts

The list of main direct beneficiaries of CATERPILLAR spare parts from November 1986 to July 1987 inclusive, denotes a similar structure as the list covering the period prior to October 1986 regarding domaine of utilization. Road works have benefitted most: 41% of the total value of spares on sale; followed by Agriculture and Agro-Industry (23%), and Mines (23%).

Prior to October 1986, 92% of the total sales were concentrated in the three above-mentioned fields of activity and spread more or less in the proportions given above. However, after November 1986 this figure was somewhat reduced to 87%. In fact, JIRAMA and the RNCFM have come into the picture and taken a 10% share.

Just as prior to October 1986, among direct beneficiaries, the private sector is predominant: of the nineteen (19) main clients, twelve (12) are from the private sector.

Indirect beneficiaries for the period following November 1986 should not differ much from those prior to October 1986 since the structure by "type of use" has hardly varied at all.

It is interesting to note, however, that the major roads currently under construction or repair lead to regions which have high agricultural potential for export or for food crops (Ambanja-Maromandia-Jangoa, Amboromalandy-Marovoay), as well as to poor and little developed regions (Ihosy-Sakaraha). These various major roads affect approximately 60% to 70% of the total population of Madagascar.

6.3 - Light Trucks

The survey mainly looked into FORD Light Trucks at the direct beneficiary level since conversations with indirect beneficiaries were somewhat informal. The Study Team was only able to interview purchasers in the Central Zone since those in the Coastal Zone are either retailers or direct non-users.

The sample is made up of seven purchasers of which four are individuals and three are private companies. Briefly, it covers the following types of activity, in order of importance: Trade; collection of produce, mainly agricultural; personal vehicle used in connexion with secondary activity. We will therefore describe our sample successively, covering the main uses, the benefits gained as well as the disadvantages and finally, we will make comments and, if necessary, recommendations.

6.3.1 - Distribution of all purchasers by geographic zone and by sector

First of all, we can state that the sector and category of purchasers of the 50 light trucks are quite homogeneous: they are in the service industry, particularly linked to agriculture since most of the light trucks are used either for collecting or despatching impulse items (bush grocers,...) or for supplying inputs (fertilizer, seed,...). Only 5 of the light trucks have a different function: 1 is used for selling fishing produce and 4 are used in building construction.

All the direct beneficiaries are in the private sector.

Half (50%) of these direct beneficiaries live in the province of Antananarivo and one fifth (20%) in the province of Toliary.

Note should be taken of the relatively low number of direct beneficiaries in the three provinces of Toamasina (8%), Antsiranana (8%) and Fianarantsoa (4%) which specialize in cash crops - a feature of which is the requirement for a relatively dense collection network.

6.3.2 - Direct Beneficiaries

6.3.2.1 - Identification of Beneficiaries

Table 5.3 reveals that 57% of the purchasers are individuals and 43% are private companies. 58% of the light trucks are the property of commercial operators and 14% of them are used in each of the following fields: building construction; collection of farm produce; delivery of commodities to clients.

Of the four individual purchasers, two are traders, one is a collector and one is a building contractor.

Furthermore, regarding the companies involved, two of the three are in trade and the third is involved in deliveries and transportation of personnel.

Finally, five of the seven light trucks are used as multi-purpose vehicles, consequently only two are used as single-purpose vehicles in the service industry.

6.3.2.2 - Transport situation of direct beneficiaries during the last 12 months

Three of the four individuals in the sample have experienced real difficulties concerning transport, particularly with regard to agricultural produce collection operations. For the fourth individual, the problems were in the despatch of supplies. As far as the companies were concerned, only one had been forced to buy a truck for lack of adequate means. The two others made their purchases in a bid to further rationalize utilization of their vehicles.

In general, the light truck purchasers estimated their monthly transport expenditure at 435,000 FMG.

6.3.3 - Utilization

As far as the main activity is concerned, four out of seven vehicles are used in trade. The others are used in the collection of agricultural produce, in building construction, and in the transport of produce and personnel.

Along with these more or less productive uses, in five out of seven cases, light trucks are used as staff cars or family cars. Just one is working transporting agricultural inputs.

Inconveniences suffered and benefits gained by direct purchasers/users

In general, the light trucks were liked but certain adverse comments should be highlighted:

- The price of spare parts is exorbitant; furthermore the parts are almost impossible to find;
- After sales service is not at all satisfactory;
- In addition, the vehicle prospectus is in English and should be translated into French.

Apart from these few comments, the FORD light truck appears to be economical when compared with other makes used for the same purposes. The benefits gained are quite substantial on two fronts: on the one hand, from the point of view of reduction of expenditure and on the other, the extension of activities. These benefits have been estimated as averaging 450,000 FMG per month (See Table T.5.5).

Most of the interviewees had felt a great demand for transport, mainly for agricultural produce collection. In fact, the 1987 production was far higher than that of 1986 because of the price increase last year. Meanwhile, transport of agricultural inputs and personnel has actually been reduced. Two reasons for this could be brought up: firstly the reduction in prices to the producers as against increases in the price of other products which inevitably leads to a reduction in standard of living and as a result of this, restriction of travelling to cases of absolute necessity.

Briefly, the acquisition of a vehicle has enabled some people to supervise their sites better and others to extend their activities. We can even report that companies who had experienced particular difficulties were finally satisfied by the services offered by their FORD light truck(s).

6.3.4 - Indirect Beneficiaries

As mentioned previously, indirect beneficiaries were interviewed without the aid of a questionnaire. Amongst the dozen individuals interviewed, many has seen their turnover increase. The wholesalers who are in the majority, stated that their clients (direct beneficiaries) regularly come for supplies since acquiring their light trucks. Farmers also stressed the improved relations between real collectors and producers. In fact, during the period prior to light truck use, collectors had to resort to individual transporters. This necessarily brought down the price to the producer. In this way, obtaining trucks has been beneficial to each of the operators concerned.

6.3.5 - Recommendations

In order to correct and improve the implementation of the FORD Light Truck portion of the MARS project, it would be advisable to set up a system to control speculation and also a credit system to enable producers to buy one or more light trucks.

1/ - Speculation control:

As we have already emphasized in connexion with FORD Tractors, the MARS project could become a source of agricultural equipment speculation, in commercial terms, unless a minimum of control is exercised as to the use of the equipment. This is even more so since the recent devaluation lends favor to such speculation. On this subject, LANDIS Madagascar have quoted the case of a client in Fianarantsoa who has recently sold a light truck which he purchased for 11 million FMG (1st batch) for 27 million FMG.

2/ - Credit system set-up

One of the crucial problems facing the farmer in acquiring a FORD light truck is the high price. Currently, no credit facilities are offered either by the LANDIS company or by banks for the purchase of these light trucks even though they should play an essential role in the development of modern agricultural production since they free producers from price fixing by collectors. A system of credit facilities would therefore be welcome in this domaine.

6.4 - Namakia Bridge

6.4.1 - Location

Namakia is a village in the south west of the province of Mahajanga within the District of Mitsinjo. Industrialized sugar cane cultivation, sugar refining and rice cultivation are being undertaken here by the SIRAMA.

6.4.2 - Why Namakia Bridge?

The SIRAMA estate (3,000 ha) is crossed in an east-west direction by the Mahavavy river. There is a bridge over the river but it is old and during the rainy season, particularly between December and March, the bridge can be completely underwater for several days. Communications with Mahajanga by road are then cut off and part of the company's activities cease.

Thus, the construction of this bridge proved necessary in order to assist SIRAMA which is the only agro-industrial unit in this area, and to support its activities.

In fact, 50% of the sugar cane grown, i.e. 100,000 T (or 10,000 T of sugar after refining) is found on the other side of the river from the refinery and has to be brought across for processing.

The same is the case for the 3,000 T of rice produced by the 750 ha of rice paddies which we spoke of previously.

6.4.3 - Benefits and beneficiaries

The Namakia bridge which has now been completed, will develop the SIRAMA's production activities (sugar cane and rice) by facilitating transportation of inputs, produce, and worker access on a permanent basis.

Also, in addition to SIRAMA, other beneficiaries will gain from the completion of this bridge. The bridge is situated on the main national road between Mahajanga and Maintirano which crosses the SIRAMA property from north to south. This road serves four Districts which produce rice and other food crops: Mitsinjo (8,069 inhabitants); Soalala (7,463 inhabitants); Besalampy (9,000 inhabitants) and Maintirano (13,236 inhabitants); and maintains liaison with Mahajanga (160,473 inhabitants)(9).

(9) Source: Ministry of the Interior, Collectivity Control and Trusteeship Directorate, 1985

7 - ASSESSMENT AND PROSPECTS

7.1 - Assessment

The utilisation of commodities imported under the MARS project supports two of the aims of the current economic policy to quell the crisis:

- The struggle for food self-sufficiency;
- Export promotion.

Tractors help towards rapid growth of food crop production by combining expansion of cultivated area with improvement of yield. In this way, tractors can play a decisive role in the struggle for food self-sufficiency, and for maximum exportation in the mid-term. The main operators in this scenario are, and will remain, the farmers be they families or individuals.

The 1986/1987 agricultural campaign experienced a fall in producer prices for most farm produce: between March 1986 and March 1987, the price of paddy rice fell from 200 FMG per kilo to 120 FMG per kilo, a reduction of 40%. The fall in the price of maize is even more spectacular, 77%, dropping from 175 FMG in March 1986 to 40 FMG in March 1987.

The nominal value of production by farmers who were direct beneficiaries of FORD tractors, has nevertheless increased since the expansion of cultivated areas and the improvement in yield have offset the effect of the fall in prices on the total revenue.

In the framework of this economic depression, the operating income of a farmer using a FORD tractor during the last 12 months and owning an average area of 36 ha, is estimated at 3,950,000 FMG or 27% of turnover. Added value represents 20% of this figure and intermediary consumables 28%. This average farmer pays 2,120,000 FMG in salaries annually for approximately 2,800 workers X days.

In fact, growth of cultivated areas promotes employment in rural areas particularly for women in re-planting and weeding work and also the poor as wage-earners.

The freeing of part of the male labor force through utilization of tractors, encourages ex-workers to rent and operate tractors or to take up related activities. On average, ten (10) farmers per enterprise have been able to rent FORD tractors.

Whereas farmers put their tractor investment into direct agricultural production of food crops, the parastatal companies, in contrast, gain great benefit regarding product collection with a view to supplying either agro-industrial units or export storage and packing warehouses. In point of fact, they make up for the insufficiencies of the road infrastructure and means of transport in rural areas.

Used as a means of transport, the tractor becomes an additional source of income for its owner in the off-season. It encourages commercialization of farm produce and facilitates supply of inputs to the farms.

Promoting employment and improving farming revenue slows down the rural exodus and gives incentive to young graduates from rural areas to return to the land (See Table T.2.10). Using a tractor to increase productivity of a family farm, it becomes possible to regroup land which has been divided into plots. In this way, it improves the social and economic status of small and medium farmers and consolidates family cohesion which, in the absence of any social security system, appears essential for the protection of women and the poor.

In short, the tractor can play a part which should not be overlooked in "social progress" by acting as a catalyser in modernizing social relations in the country whilst respecting the cultural values of the environment: use for burials, loaning to family free-of-charge, speeding up circulation of goods, development of agricultural wage-earning, progressive monetarization of rural areas.....

FORD light trucks are mainly used for the collection of farm produce, despatching impulse items, but they also play an important role in the commercialization of produce. Their use is closely linked with the cultivation of export crops. The purchasers of light trucks have been able to reduce transport costs in their farming and commercial operations. The supply of inputs and the facilities offered for commercialization of agricultural produce have encouraged direct beneficiaries to extend their farms in order to increase production.

It should, nevertheless, be noted that some FORD light trucks are being used as bush taxis and only transport passengers. Their link with agriculture is therefore somewhat tenuous.

The "Indirect Beneficiaries" upstream are the exporting companies or local traders dealing in farm produce and, downstream, the agricultural producers.

Finally, it seems that the low-powered tractors could, to a certain degree, replace the FORD light trucks for the collection of farm produce and input transportation.

Whereas tractors contribute more efficiently and more dynamically to food crop production, a great proportion of CATERPILLAR Spare Parts, meanwhile, directly participate in export promotion. Under the MARS project, these spare parts are mainly used in: Roadworks, Agriculture and Agro-Industry and Mines. The last two fields of activity are principally oriented towards export (KRAOMA, SIRAMA,...) whilst the first improves collection and commercialization of farm produce whether for export or local consumption.

Thus, CATERPILLAR Spare Parts support the two previously mentioned aims of current economic policy, just as the tractors do.

The Direct Beneficiaries of CATERPILLAR Spare Parts are at an advantage with regard to maintenance of their plant and machines in that they are able to purchase spare parts in FMG. It should not be forgotten that between 70% and 80% of all spare parts ordered are through the MARS project. Foreign companies gain double benefit since they can economise their foreign currency whilst being paid in the latter. Similarly, local companies are no longer subjected to foreign currency constraints and can tender for road projects.

Thus, Direct Beneficiaries gain definite benefit from the maintenance point of view: and can ensure the continuity of their activities.

Whereas Direct Beneficiaries are clearly identifiable from HENRI FRAISE Fils et Cie.'s list of purchasers, Indirect Beneficiaries, in contrast, are not so and are actually scattered throughout the population.

Two types of Indirect Beneficiaries can be distinguished: those directly linked with the use of CATERPILLAR plant and those who are not.

The first category, made up of the wage-earning employees of the firms concerned, has benefitted from relatively high earnings including bonuses and allowances. Small farmers have thus been able to become wage-earners through the system of temporary hiring of laborers on sites.

Annually, each company recruits between 300 and 500 wage-earners as seasonal laborers.

In fact, it should be noted that a good number of the companies concerned are involved in "High Intensity of Labor" (HIL) activities.

The second category is represented by the Collectivities. Road works, Railroads as well as Water and Electricity affect the population as a whole. Thus, we have estimated that the road projects in which CATERPILLAR Spare Parts have been used since November 1986 target 70% to 75% of the Malagasy population. In this regard, it should be stressed that the Ihosy-Sakaraha road project serves one of the poorest regions of Madagascar.

Since the activities of the Direct Beneficiaries of CATERPILLAR Spare Parts are quite diversified, the impact of their use could cover the whole of Madagascar.

Alongside these numerous benefits offered by commodities imported under the MARS project, it is important to identify the problems and disadvantages of each commodity brought up during the assessment:

TRACTORS

- The recent high increase in the price of tractors may defeat the stated objectives of the MARS project;
- The relatively high age of Direct Beneficiaries does not lend itself favorably to the accumulation process in the farming domaine, whilst it constitutes a constraint on tractor acquisition;
- Maintenance is a problem for farmers who are distant from After Sales Service Centers;
- The farmer owning a tractor lives with the constant problem of land ownership;
- The brutal slump in producers prices during the last agricultural campaign could turn farmers against semi-mechanization.

LIGHT TRUCKS

- Light trucks could become a source of commercial speculation;
- The recent large increase in the price of light trucks, in the absence of bank loan facilities, discourages genuine farmers;
- Users of FORD Light Trucks are faced with a spare parts problem. Furthermore, many of these vehicles are used outside of the capital.

CATERPILLAR

- Delay in releasing the USAID Extension Fund has forced HENRI FRAISE Fils et Cie to apply for currency purchase under the LIR;
- Direct Beneficiaries complain about the high costs.

Meanwhile, we would like to stress the fact that the problems and disadvantages identified regarding TRACTORS could create a real blockage in the process of modernizing Malagasy agriculture and thus become obstacles in the struggle for food self-sufficiency.

7.2 - Prospects

In order to strengthen the positive trends and correct the negative trends found during the survey, we would propose the following outline recommendations:

1 - Strengthen positive trends

- R.I - The study has clearly shown that, whether regarding the Tractors, the CATERPILLAR Spare Parts or even the Light Trucks, there is a very strong demand for the commodities in question both at the direct beneficiary level and the indirect beneficiary level.

It therefore seems that the MARS project fundamentally corresponds to a real need.

This is the reason for which we recommend that it be maintained and, if possible, intensified with a view to supporting the efforts to rehabilitate Malagasy agriculture in an effective and continuous manner.

- R.II - In general, it transpires that for each commodity studied, the beneficiaries have felt the positive effects of the MARS project: subjectively, they acknowledge an improvement in their condition and, objectively, the great majority have acknowledged an increase in their production and income.

Consequently, the actions undertaken through the MARS project should be diversified further either upstream, at the level of types of commodities imported, or downstream, at the level of use of counterpart funds.

2 - Correct negative trends

- R.III - The survey has emphasized that despite the extension of cultivated areas and the improvement in yield brought about by the MARS project, the drop in producer prices could leave medium-sized enterprises incapable of paying off their bank loans.

Thus, action programmes should be drawn up to stabilize the producer price of food crops at an economically viable level.

R.IV

Considering that a lacking after sales service could lead to a reduction in the length of life of commodities which would thereafter cause direct beneficiaries to loose interest.

It would be desirable for the bodies dealing with importation and distribution of commodities imported under the MARS project to be progressively decentralized.

In the meantime, more frequent visits by the technicians concerned to the direct beneficiaries are really needed as well as more intensified advertizing.

Follow-up questionnaires on the operational state of commodities purchased under the MARS project could also be sent to direct beneficiaries once or twice a year. Consumer satisfaction would thus be improved regarding usually-required spare parts.

Delivery of a set of standard spare parts along with every tractor or light truck sold is furthermore, recommended. The above-mentioned questionnaire could be used to determine what the set should be comprised of.

R.V

Considering the problems caused, on the one hand, by the rigidity of the current credit system and on the other hand, by the contradictions between the "formal" and the "informal" credit systems.

R.V.1

In addition to these measures, there should be some easing in the bank credit system for small and medium-sized farmers. In fact, whereas prior to July 1987, the farmer had to produce 3,900,000 FMG as his personal contribution to the purchase of a FORD 3910 tractor, this figure reached 8,500,000 FMG after August 1987. His monthly payment to the bank on a medium-term 5-year loan at 16% prior to July 1987 was 330,000 FMG as against 730,000 FMG after August 1987.

R.V.2

With a view to easing the credit system, its extension to the acquisition of light trucks for farming could be studied. This new credit system would also provide a means of control of the use of tractors and light trucks.

R.V.3

Similarly, it would be desirable for access to credit facilities to be open to young people and women, preferably grouped in agricultural associations.

- R.V.4 - With a view to this reform which seems fundamental, the bank credit system needs to be given further study on the basis of analyzing the "informal" credit system which is normal practice among the majority of the population, particularly the rural population.

To sum up, the revision of agricultural bank credit for individual semi-mechanized farm enterprises, taking account of the informal credit system, constitutes one of the essential conditions for victory in the struggle for food self-sufficiency and towards the reduction of imports.

- R.VI - Finally, we therefore suggest that from the conception through implementation of this new credit system, the MARS project and the Counterpart Fund should be associated.