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MADAGASCAR

Societe d'Aménagement du Lac Alaotra

**An Evaluation of the Industrial and
Commercial Division of SOMALAC**

December, 1988

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I. INTRODUCTION

1.01 This report presents the findings of the Evaluation Phase of a study of the Industrial and Commercial Division of the Societe d'Aménagement du Lac Alaotra (SOMALAC). The study, in three phases, is one of the concurrent reviews of SOMALAC Divisions intended to assist the Government of Madagascar to identify and implement a strategy for efficient utilization of facilities currently operated by SOMALAC in the Lac Alaotra Region. The strategy is also to reflect the results of concurrent work on a regional development plan for the area.

Background

1.02 SOMALAC was founded in March 1961, as a mixed enterprise, to undertake infrastructure development in the Lac Alaotra Region. In subsequent years, its role broadened to include other development activities, principally in the agricultural sector. In July 1982 SOMALAC was converted to an "entreprise socialiste", and charged with ensuring the sustained and efficient exploitation of the state-developed irrigation areas of Lac Alaotra. Input distribution, research and extension were included in its mandate, as were the purchase of paddy, its transport and processing, and the marketing of rice and byproducts.

1.03 With the initiation of the Rice Intensification Project in 1983, SOMALAC was reorganized into three units: Canal Development and Maintenance (EAE); Production Intensification (EIP); and, Industrial and Commercial (EIC).¹ These changes were intended to promote greater efficiency by clarifying responsibilities and increasing autonomy among the several key functions of SOMALAC. It was also intended that personnel be reduced and that a new automated accounting system and new administrative procedures be put in place.

1.04 Considerable progress has been made since that date in rehabilitating the irrigation network, improving research and extension services, and organizing farmers to take responsibility for canal

¹ - Etablissement Aménagement et Entretien (EAE)
- Etablissement Intensification de Production (EIP)
- Etablissement Industriel et Commercial (EIC)

maintenance. Improvements have also been made to the processing facilities to enable them to continue to operate despite their age. In addition, an accounting system has been installed which is designed to permit analysis of the performance of each activity and unit.²

1.05 There remain areas in which progress has been disappointing in relation to the expectations set out in 1983; for example, reduction in the number of employees, and improvements in their level of performance. However, in addition to consideration of these continuing needs within the context of SOMALAC's original mandate, it has become increasingly clear that the mandate itself should be reviewed. Since 1983, policies have changed with respect to the role of the public and private sectors in economic activity in Madagascar. Broader regional development plans are also being undertaken for the Lac Alaotra Region, which will have implications for public sector agencies working in the area.

1.06 The Government of Madagascar is now reconsidering the role of SOMALAC in the context of these developments, and is sponsoring in-depth studies of each of the units of the enterprise, to assist in this process. The study of each unit is expected to assess its present condition, identify alternative scenarios for the provision of services now offered by each, and assist in the development of implementation plans for changes that may be decided upon. USAID has agreed to finance the study of EIC, of which the present report is a part. The Terms of Reference under which this study is being conducted appear as Annex 1.

The Role of EIC

1.07 Within the context of SOMALAC, EIC is responsible for the organization, management and execution of the following activities:

- The purchase of paddy in the areas of Lac Alaotra, Andilamena and Moramanga.
- The assembly of paddy and its transport to the three SOMALAC rice mills.
- The milling of purchased paddy, and all functions related to the operation of the mills.
- The storage and transport of SOMALAC's paddy and rice.
- The sale of rice and rice by-products.

² This system is not yet operational within EIC, although some data from the unit may be incorporated in analysis at the SOMALAC level.

1.08 The performance of EIC in relation to these functions is examined in subsequent chapters of this report. However, it is important, for an appreciation of both the accomplishments and the continuing needs of the Division, that this evaluation be seen in the context of the environment in which EIC operates. Chapter II provides a description of developments and practices in the last several years in rice production and trade in Lac Alaotra.

II. Overview of Rice Sector in Lac Alaotra Region

2.01 The Lac Alaotra Region has historically been the major surplus producer of rice in Madagascar. Although the area cultivated varies from year to year according to rainfall, the condition of irrigation facilities, and producer expectations with respect to price, the resource consists of about 30,000 ha. of land within the SOMALAC zone, 40,000 ha of traditional cultivation, and a further 30,000 ha of swamp cultivation. Approximately 30,000 ha outside the SOMALAC zone is considered to be permanently rainfed, while 20,000 ha. is irrigable.

Paddy Production

2.02 The best period of production in Lac Alaotra, in terms of area and yields, was the mid-1970's. During that time, the 30,000 ha. of land served by SOMALAC infrastructure had an average yield of more than 3 tons per ha. In 1977, SOMALAC purchased 102,000 tons of paddy, and total production was in the order of 190,000 tons. However, real prices declined steadily from 1978 to 1982, and that, combined with reduced availability of inputs, resulted in a decline in yields. Infrastructure performance was also a factor; by 1982 the SOMALAC canals could only serve 15,000 ha. Average yields that year were 1.7 tons per ha.

2.03 The Rice Intensification Project, which began in 1983, has had an impact on productivity, particularly through its improvement of infrastructure. Average production in the four years after start-up was 20% greater than in 1982. In 1985, the last year of its monopoly, SOMALAC purchased 65,000 tons of paddy. In the following year, its purchases dropped to 29,000 tons.

2.04 As the following table illustrates, there are significant fluctuations in annual production in the SOMALAC zone, despite improvements in irrigation system. Without access to irrigation, fluctuations elsewhere in the Region were even greater.

Table 1

Paddy Production in the SOMALAC Zone ('000 tons)

<u>1982/83</u>	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>	<u>1988/89</u>
87.0	72.5	89.0	86.2	105.6	90.0	80.0 est.

2.05 While these fluctuations result from a number of factors, the 1986/87 production is of particular interest in the context of the activities of EIC, because field interviews indicate that it was principally the result of producer expectations of higher prices with

the liberalization of the paddy trade that year. Producers are sensitive to price expectations in determining the area they will cultivate and the level of inputs they will use. In addition, even smaller producers may hold paddy after harvest if they anticipate rising prices in mid or late campaign.

2.06 One other dimension of importance from the perspective of EIC as well as national rice supplies is the share of production that is marketed. Producers attend to their own rice needs first, and therefore the share of output they sell increases with the level of production. In good years, as much as 80% of production may be marketed, but even in 1986/87, when production was above normal, more than one third of all producers did not offer paddy for sale. (Table 2) The distribution of land holdings among zones indicates the relationship of farm size to market participation.

Table 2

Subsistence Paddy Producers - 1986

	<u>Lac Total</u>	<u>North</u>	<u>West</u>	<u>Andil.</u>	<u>East</u>	<u>South</u>
Percent Producers Who Sold No Paddy	37%	21%	4%	57%	65%	16%
Ave. Ha. Per Holding In Zone *	4.6	5.4	7.6	4.6	2.5	3.3

* Based on mid-point of ranges in Annex 2, Table 1
(15 ha for large holdings)

2.07 In view of the fact that there is significant scope for increasing yields above the levels that prevailed that year, these producers represent an untapped resource for supplying national rice needs.³ With the rising population of the Region, the future contribution of Lac Alaotra to the rice needs of the country will depend on prices, inputs and infrastructure to induce greater yields.

³ Some observers note a counter-trend this year in that reduced production has resulted in a higher share of production being sold by farmers to maintain their cash incomes. While this is of interest to those purchasing and processing paddy, it does not contribute to the net supply from the Region; in fact, the Region may need to import rice later this year for the first time.

Paddy Prices

2.08 In real terms, paddy prices declined by 25% between 1975 and 1982. Coincident with the beginning of the Rice Intensification Project, more attractive prices were offered to producers in 1983. However, although prices have more than doubled since that time, the real price has again declined, and planted area and input levels have shown some negative response. The quality of composite data on paddy prices available from MPARA was not adequate to permit detailed comparisons among years and regions in recent years. The data that were obtained appear in Annex 2, Table 2, for information only.

2.09 Production costs this year were FMG 120 - 150/kg depending on the level of inputs used. Prices paid by EIC were FMG 150 - 185/kg, but private buyers paid prices of FMG 130 - 200/kg. These prices are about FMG 30/kg higher than those prevailing last year, for both parastatal and private buyers. There is a greater difference between the two types of buyers on a weighted price basis, because parastatals have purchased very little paddy at more than FMG 160/kg.

Local Demand for Rice

2.10 Population in the Region is currently 340,000, and is growing at the rate of 4.0 - 4.5%/annum, fueled by substantial in-migration. Rice consumption in the Region averages 0.76 kg/day, and is as high as 1.0 kg/day for some groups of the population. Local consumption needs can therefore be expected to reduce the surplus available for shipment outside the Region unless a more positive production trend can be established than has been the case in recent years.

Marketing Pattern

2.11 Since 1986, trade in paddy and rice products has been open to private individuals and companies as well as public enterprises. After a long period of monopoly in this sector, changes were somewhat erratic and speculative in the first several years, but a pattern is emerging now of a steadily growing private sector involvement, organized into several tiers, and gradually displacing conventional public purchasers.

2.12 SOMALAC is one of seven parastatal enterprises that purchase paddy in the Region. In addition, there are about 20 private companies engaged in this activity as well as a large number of producers who mill their paddy under contract and arrange their own rice sales, typically in Moramanga. Annex 2, Tables 3 and 4, present information on the activities of these participants in recent years.

2.13 The private sector has not gained as large a share in paddy procurement in the Lac Region as it has on the national level. This reflects not only the shorter time since liberalization (three seasons rather than six), but also perhaps the larger share of producers served

by conventional buyers in the Lac, particularly EIC, with whom long-standing relationships continue to influence sales decisions.

2.14 It is important in assessing the relative strength of this new private sector involvement to recognize that mechanisms are not yet in place to accurately record the level of private activity. Anecdotal evidence indicates that the actual volume of paddy purchased by private traders and millers is perhaps four times the volume reported. If this was the case in 1988/89, the proportions would be almost 25:75 private and public sector purchases. Sixteen thousand tons of paddy would be more consistent with the level of private transport and milling activity in evidence in the Region this year.

Market Behavior of Parastatals

2.15 There is little direct competition among parastatals in the purchase of paddy. Geographic areas of concentration are well defined and prices are similar. However, parastatals are losing their share in the paddy market, with most of the loss going to small traders. Most parastatals were able to meet purchasing target this year, but these were lower than last year. For example, SINPA bought 50% less than last year. SOMALAC reduced its target by 33% before the buying season due principally to financial constraints.

2.16 The parastatals normally operate as independent entities in the purchasing and processing of paddy. This has led to some unnecessary public sector costs; for example, SINPA carried a stock of 20,000 tons of paddy after the 1987 season for the stated reason of insufficient milling capacity, while SOMALAC mills were under-utilized.⁴ They do, however, behave similarly with respect to price, honoring the established floor price for paddy, and being market followers as prices creep up during the season. While it is not an expressed policy of the government to use parastatals to dampen the paddy market, their behavior appears to have this effect, although it also reduces the volume of paddy sold to them, and therefore their role as rice suppliers later in the year.⁵

2.17 Most of the parastatals, including SOMALAC, are considering the possibility of exporting rice in the near future. The principal problem appears to be poor quality paddy, but these buyers pay only FMG 5-10/kg extra for quality paddy - less than the differential paid by private buyers, and less than is required as an inducement to producers to deliver better paddy. The agronomic potential exists to

⁴ Toward the end of the 1988/89 season, EIC began to do some custom milling for other parastatals.

⁵ For example, this year both SOMALAC and COROI had milled and sold all their stocks by mid-December, except very small quantities reserved for later sale to personnel and preferred clients.

meet international standards, while more in-depth market research needs to be done to determine if the Indian Ocean market, for example, is a profitable opportunity. However, none of the parastatals is conducting such investigation.

Development of the Private Sector

2.18 With liberalization in 1986, private trade in paddy and rice developed very rapidly, based on several layers of intermediary each providing a different form of service.

Conventional Private Traders (CPT's), including those who previously bought rice from SOMALAC and other parastatals, constitute the upper level of the structure. They provide capital for paddy purchase, do some direct buying from larger producers, and arrange processing and marketing. Most of their purchases, however, are effected through two levels of local entrepreneurs - Collectors and Sub-Collectors.

Collectors enter into an agreement with the traders to purchase paddy at a price set by the CPT, for which the former receives a commission, usually FMG 5/kg. The CPT may also advance funds to the Collector for the purchases covered by the agreement. It is the Collector who operates buying points to which producers deliver their own paddy or to which Sub-Collectors bring paddy they have purchased from producers.

Sub-Collectors operate between the Collector and producers who have neither the capacity nor the inclination to arrange transport of their paddy to buying points. Their margin is very small, in some cases nil, but they operate their own trucks or bullock carts and generate income principally from transport charges.

2.19 This structure has an important characteristic that contributes to market efficiency: The capital intensity of operations declines as each level deals with smaller and more scattered purchase lots. Consequently, fixed charges are lower, and buyers at the lower levels of the structure can be very flexible in the deployment of their resources, both geographically and over time.

2.20 There is, however, some obscurity in the price producers actually receive from private buyers for their paddy. Some buyers also engage in providing services to producers, from seasonal inputs on credit to transport charges, and there is at present no control other than competition on the implicit rates for these services. Similarly, there is not at present a consistent control on standards, weights and measures used by private traders. It is likely that the loyalty some producers feel toward parastatal buyers, despite somewhat lower prices, may relate to confidence in this latter respect, as well as to the reluctance of these buyers to discount for inferior quality paddy.

2.21 One practice that has gained prominence, or notoriety, in recent years is "tir au vol". Intermediate traders, such as Collectors and Sub-Collectors, buy paddy using funds advanced to them by their respective buyers. In "tir au vol" operations, other traders then offer cash for collected paddy. When the lender checks the books of his agent, they are in balance in respect of cash and paddy, but in the meantime the intermediate trader has earned a margin on unrecorded purchases and sales. This reduces the volume of paddy generated for the account of the lender, contributes to unrecorded private paddy trade, and in some cases, when the illicit buyer pays a premium, deprives the producer of the full market value of his paddy.

2.22 This year there were more than 100 small motorized dehullers operating in the Region legally, and about 200 more that are as yet unlicensed. These operators typically mill paddy for producers or small-scale traders, although some also buy and sell on their own accounts. The producers and traders who use such facilities normally do not hold stocks, but arrange transport immediately for sale of their rice in urban centers. It is not possible to quantify the paddy marketed in this manner, but anecdotal evidence indicates that the reported volume of private trade may be as little as 20 - 25% of the total trade in private channels.

2.23 In addition to the hullers referred to above, there were four private rice mills in operation this year. One of the major private businessmen in the area is currently building another large rice mill within the SOMALAC irrigation perimeter. This individual already buys 5-10% of paddy in the market (8,000 tons in 1988/89) and will likely increase his presence in the coming years.

2.24 There is an increasing number of trucks on area roads, including many new trucks owned by area merchants and transport companies, an indication that the private sector is making substantial investments in the rice trade and other transport needs of the Region. Road blocks or other local regulatory constraints do not appear to be a problem for this activity. The pattern of transport services has changed, however, with liberalization and the increasing level of economic activity in the Region. Prior to 1986, most private transport of rice took the form of contract services for SOMALAC and other parastatal producers and processors. Now, trucking companies are having to locate other traders, and negotiate arrangements with them. In many cases, rice leaves the Region as backhaul cargo for vehicles used in the first instance to import general merchandise to satisfy the growing volume of purchases by the local population.

Summary

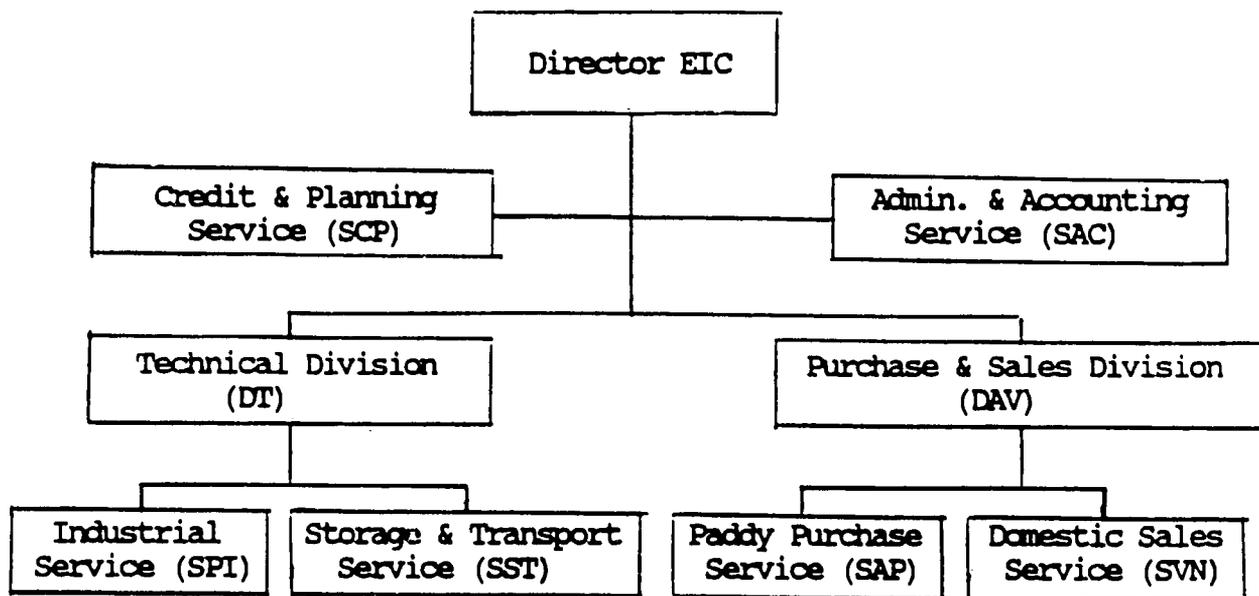
2.25 The pattern of production and trade in the rice sector of the Region has gone through a period of rapid change in recent years as the result of several factors: Rehabilitation of irrigation infrastructure and improvements in research and extension; liberalization of the rice

trade, with its attendant shift toward private trading and market-based pricing; growth in the local population, and a concomitant increase in the magnitude and diversity of economic activity.

2.26 These changes have created some instability in the local political and economic power structure, and the struggle of established leaders to preserve their authority has led to resistance to change, particularly in traditional organizations such as SOMALAC. This juxtaposition of dynamic environment and conservative leadership has given rise to an apparent inertia in the management and decisions of SOMALAC, a pattern which is most apparent in EIC because of its interaction with producers, employees, traders and consumers.

III. The Organization and Management of (EIC)

3.01 The following chart represents the current organization of EIC.



3.02 The Office of the Director is responsible for the overall organization and management of the enterprise. Units within the enterprise have specific responsibilities as follows:

- Administration and Planning Service (SAC) Assures the oversight and control of all EIC administrative, budgetary and financing activities;
- Credit and Planning Service (SCP) Responsible for the credit dossiers, insurance portfolio and the development of the Annual Work Plan.
- Technical Office (DT) Responsible for the rice milling operations. Within that Division, the Industrial Service (SPI) assures the operation and maintenance of the mills and the Storage and Transport Service (SST) manages the paddy and rice stocks and transport operations.
- Purchasing and Sales Office (DAV) Responsible for the purchase of paddy and the sale of rice and rice by-products. The Paddy Purchase Service (SAP) organizes and manages the purchase of paddy rice and the Domestic Sales Service (SVN) is responsible for the sale of rice, billing and the repayment of loans.

Legal Status

3.03 SOMALAC was converted from a mixed enterprise to an "entreprise socialiste" by Ordinance No. 82.295 of July 1, 1982 and its related Decree No. 3083 of July 2, 1982. This form of organization is reserved for commercial enterprises, and is subject to commercial law. Such enterprises are at least majority-owned by the state, although there may be other shareholders other than private individuals. The state owns 85% of the shares of SOMALAC.

3.04 This form of enterprise is not managed by an agency of government, but by a Board of Directors which includes representatives of the workers of the enterprise. Other members of the Board include: The President; four representatives of the State; a representative of the local Collective; a commissionaire appointed by the State; and the Director General of the enterprise, who is appointed by the Prime Minister. For its agricultural, commercial and industrial operations, SOMALAC comes under the tutelle of MPARA.

3.05 EIC does not have a legal identity independent of that of SOMALAC. The autonomy it is supposed to exercise in its operations is a matter of internal management decentralization. In recent years, the Director General and the Comite Restreint have felt some concern over the capacity of EIC management, and have progressively reduced the level of autonomy accorded to the Division.⁶ Following sections of this report will examine performance problems, and factors at the level of SOMALAC, that apparently gave rise to this trend.

Management

3.06 EIC does not function with any significant degree of autonomy from the Direction Generale of SOMALAC. All decisions with respect to strategic issues such as investment, personnel policy, or the pricing, location or volume of paddy purchases and rice sales are taken by the Comite Restreint, and the Director General. Furthermore, the DG takes an active role in routine operations of the Division.⁷

⁶ The most recent measure in this respect was the decision to place the Accounting and Credit Service of EIC under the direct control of the corresponding unit of the Direction Generale. This was done by a simple "Note de Service" dated November 10, 1988.

⁷ For example: Trucks cannot leave Lac Alaotra Region without an "ordre de mission" signed by the DG. Ad hoc intervention has included the following: Instructions with respect to individual rice sales occasionally go direct from the DG to the sales unit; instructions have been similarly issued with respect to shipping arrangements for rice. Such a degree of centralized control is not only inefficient, it creates confusion and conflict with actions taken through normal channels.

3.07 This relationship appears to be the result of two factors:

First, the importance of EIC's business activities to local and national officials who wish to see the flow of funds used to further both policy objectives and other shorter-term interests such as employment generation. This, together with SOMALAC's perception that it is a policy arm of government with respect to stabilizing paddy markets and supplying urban rice consumers, leads the Direction Generale to push EIC to take actions that are not always commercially motivated.

Second, the management of SOMALAC and EIC have not succeeded in establishing systems and appointing qualified personnel that are capable of controlling the complex procurement and sales processes of the Division. Problems in these respects are discussed in following sections.

3.08 While it is difficult to isolate these factors in practice, the result is not consistent with the mandate implicit in the creation of "Etablissements" in 1983. It removes initiative and accountability from the managers of the Division, and results in EIC optimizing neither its financial nor its policy performance.

3.09 The performance of managers within EIC is directly affected by its dependency on SOMALAC. Their roles are more supervisory than managerial, and even here the lack of adequate sanctions and rewards prevents effective supervision of personnel. Some management positions within EIC are occupied by individuals who do not demonstrate managerial skills nor show understanding beyond the administrative or technical level of their jobs. Others, who are qualified to manage such operations, are simply frustrated at the lack of scope to exercise discretion, and have adopted a responsive posture. Morale among managers is low, and absenteeism high.

3.10 The present Division Manager has shown initiative and commitment in several key areas, such as the development of automated reporting systems for paddy purchase and rice sale activities, and the preparation of a document summarizing the Division's activities over the past five years.⁸ He has a good understanding of the functions of EIC. However, there are indications that the quality of action at this level is not consistent, and that the conflict that is evident with the Director General is the result of mutual uncertainty and lack of confidence between the incumbents.

3.11 Automated accounting and reporting have not been adopted in EIC. Those modules that have been developed are not in regular practice because of equipment problems and inadequate staff skills. Authority to proceed with these innovations has not been received from the

⁸ Activites de l'Etablissement Industriel & Commercial (Periode: 1983 a 1988) May, 1988

Direction Generale. The systems that are in place are labor intensive, cumbersome, and readily subject to abuse. They are not used to generate information that, in terms of timeliness or format, can be used in Division management. The most serious problems exist in the paddy purchase and rice sales systems.

3.12 Another area in which management improvement would be required for the most effective performance of EIC is coordination with other Divisions of SOMALAC. While it could be argued that the active role of the DG obviates this at the present time, there are several issues on which we believe more direct relations among Divisions could be useful.⁹

3.13 It is difficult to assess management potential among individuals who have been operating for a number of years under the close control of another level of management. It is clear, however, that the present management team could not assume complete responsibility for EIC. A period of training and evaluation, followed by selective replacement of individuals would be required before the autonomy envisaged in the "Etablissement" approach could be realized.

3.14 In our judgement, at least some of the present incumbents would perform well if tested under conditions of increased autonomy such as might be created by the adoption of a contrat-plan. These individuals could perform equally well as members of a team selected to manage EIC under contract. In either case, the development of objective criteria and their rigorous application would be essential in the selection of managers who should be given the opportunity to continue with EIC.

Personnel

3.15 At September 30, 1988, EIC had 321 permanent and contractual employees, of whom 230 were permanent. In addition, there were approximately 250 seasonal employees, paid on hourly, daily or piece-work bases. The distribution of permanent and contractual staff by unit is presented in Table 3 on the following page.

3.16 The general distribution of staff, by number, among the functional groups of EIC is normal, except that the Ambongalava Industrial and Storage and Transport units, located at SOMALAC headquarters, have staffs much larger than their relative shares of

⁹ For example: Feed-back to EIP with respect to milling aspects of paddy quality would be a useful adjunct to price differentials in promoting improved paddy quality. Regular dialogue between EIC and EAE could ensure coordination of access road maintenance and paddy collection operations.

paddy volume.¹⁰ The more serious problem, however, is that the total number of these permanent and "semi-permanent" positions is too great for the volume of activity conducted by EIC.

Table 3.

EIC Permanent and Contractual Personnel

Office of the Director	10
Admin. & Accounting	24
Credit & Planning	10
Paddy Purchasing	22
Domestic Rice Sales	34
Industrial I	61
Industrial II	28
Industrial III	22
Storage & Transport I	64
Storage & Transport II	22
Storage & Transport III	<u>24</u>
Total	321

3.17 In addition to the issue of seasonality of labor needs, it is also interesting to examine EIC employment in relation to total volume of throughput from year to year.

Table 4

Relationship of Employment and Throughput - EIC

	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>	<u>1988/89</u>
Paddy Purchased ('000 tons)	64.9 *	29.3	20.0	19.6
Paddy Milled ('000 tons)	35.8	28.4	19.3	18.2
Permanent Staff	262	256	249	228
Total Staff (Average)	599	608	565	479
Total Staff (Peak)	854	788	717	526

* Includes paddy milled by private mills under contract.

3.18 During this period, when paddy purchased declined by 70% and paddy milled declined by 50%, permanent employees were reduced by only 13%, and the average total staff declined by only 20%. The only significant reduction was in the number of casual laborers employed at

¹⁰ Transport operations are run from Ambongalava, accounting for some of the higher number in SST.

peak season. ¹¹ In 1985, '86, and '87, salaries and wages were 20%, 30% and 40%, respectively, of direct operating costs exclusive of finance charges.

3.19 There is always the need for seasonal enterprises to keep a minimum core of skilled workers on the payroll during the off-season to ensure satisfactory plant operations, but those responsible for the staffing of EIC appear to have succumbed to pressures to provide year-round employment irrespective of the needs of the enterprise. At December 15, 1988, when almost all purchase, processing and sales activities had ceased, EIC still had approximately 100 seasonal employees on its payroll. In contrast, COROI had terminated all seasonal workers by that date.

3.20 The overall quality of personnel is poor, in terms of training and motivation. Many have been appointed by virtue of their relationship with members of SOMALAC's management and Board. In other cases, EIC has become the repository of personnel transferred from other Divisions of SOMALAC because of redundancy or poor performance. The present Division management has been reluctant to release contractual personnel because they have been, to a large extent, performing the work that should be expected of permanent employees. This stalemate results in excessive costs to the Division as well as poor morale among workers, and needs to be addressed as a matter of some urgency. There are no doubt individuals who are capable of performing necessary tasks competently, but, as in the case of managers, a set of objective criteria would have to be developed and applied to select those employees to be retained.

Technical Assistance

3.21 There were nine externally-recruited technical assistants working at SOMALAC at the time of our field work. Of these, only one was attached to EIC. As Technical Director, this person, together with his counterparts in the Technical Unit, has been very effective in ensuring the best performance of the milling equipment that could be achieved under the constraints of mill age, shortage of parts, and shortage of skilled and motivated personnel. Improvements at Amparafaravola, noted in Section V, are an example of his achievements in collaboration with the new manager of that mill.

¹¹ However, even in the off-season in 1988, when there was no purchasing, marketing or processing activity, there were 115 casual employees on the payroll. This compares to 50 during the same period in 1985.

IV. Paddy Purchasing Operations

4.01 EIC paddy purchases extend over an area of 10,000 sq. kilometers of the Lac Alaotra basin. This area is divided into nine sectors, each with an average of 25 purchasing points. (In 1988, purchasing was reduced by operating only five sectors with a total of 126 purchasing points.) Prior to 1986, SOMALAC enjoyed a monopoly for the purchase of paddy within the state-operated irrigation area, but now it must compete with a growing number of private traders and millers, as well as, in principle, other parastatals.

Pricing Policy

4.02 The stated objectives of EIC paddy purchasing activities include the promotion of productivity among growers and the improvement of paddy quality. However, in practice neither the price level nor the quality differential has been as attractive to producers as those of private buyers. This is in part the result of a financial constraint faced by EIC, but it also reflects the importance of another aspect of SOMALAC policy, namely to set its paddy prices at or above the announced floor price. This is the one explicit policy directive of MPARA to SOMALAC.

4.03 Without apparent directive from Government, SOMALAC has also adopted the policy of selling its rice at or near the announced intervention price, thus having a dampening effect on the urban rice market and functioning as a secondary stock tampon. The inconsistency of these objectives - quality improvement, commercial performance, and price stabilization - represents a basic dilemma in the operations of EIC.

4.04 At the start of the 1988 season, EIC announced paddy prices of FMG 150/kg (CII) and FMG 160/kg (CI). Although prices increased slightly during the season, EIC has not been paying the announced quality differential.¹² All strategy with respect to paddy purchase is determined at the level of the Comite Restraint, as are all price changes during the season.

4.05 The liberalization of paddy trade in Lac Alaotra, together with the pricing practices and buying procedures of EIC have resulted in a major decline in the volume of paddy offered to EIC by producers. The following table illustrates the trend in relation to paddy production and EIC collection since 1983.

¹² This year, the Collective Decentralisees took the position that there should be no quality differential in EIC paddy prices, a position that was apparently adopted by SOMALAC's management.

Table 5.

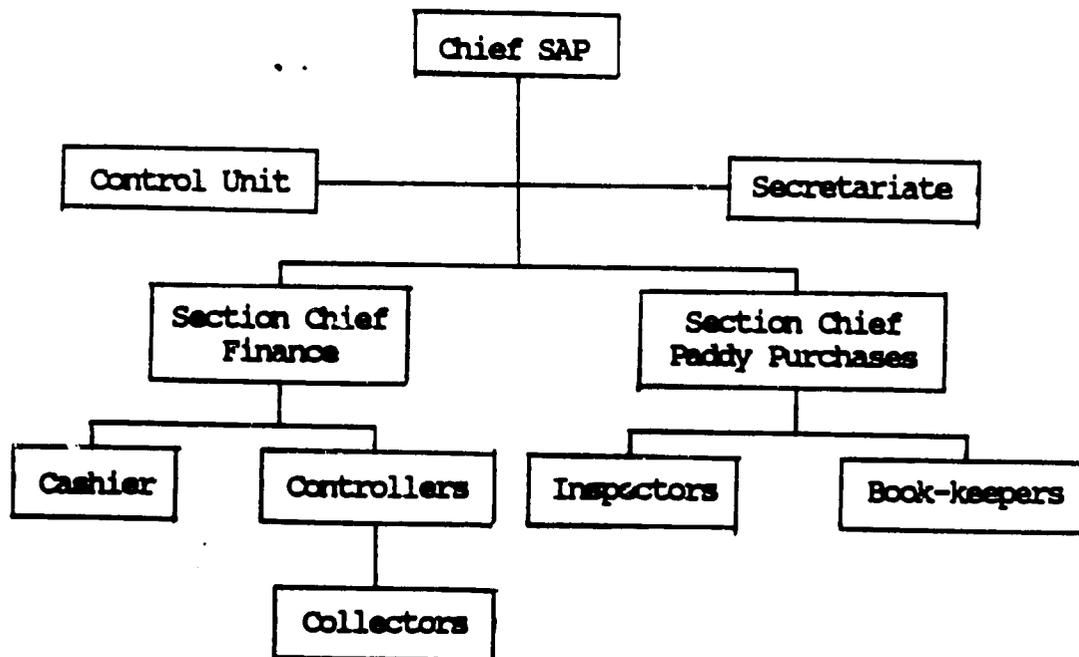
Paddy Collection By EIC

	<u>Paddy Production</u> <u>in SONALAC Zone</u> (..... tons.....)	<u>Paddy Purchased</u> <u>by EIC</u> Percent	
1983	86,959	77,585	89.2
1984	72,512	64,798	89.4
1985	89,027	64,865	72.9
1986	86,157	29,308	34.0
1987	102,000 (est.)	19,962	19.6
1988	82,000 (est.)	19,228	23.4

4.06 Annex 2, Tables 3 and 4, present further information on the relative importance of different collectors and processors in the paddy trade in Madagascar and the Region.

Organization and Procedures

4.07 The service responsible for paddy purchases has undergone a number of changes in recent years to adjust to the changing circumstances of the market, particularly the liberalization of paddy trade. In the current season (1988/89), it was organized as follows:



4.08 EIC uses private businessmen as Collectors. In 1988, because of a reduced volume of funds for purchase, only 125 such Collectors were engaged, and placed under the supervision of five Controllers, staff of

SAP. Funds are advanced to Collectors in relation to their expected purchases over a period of several weeks, and replenished as purchased paddy is verified by Controllers and collected by EIC vehicles. Collectors are paid a commission of FMG 5/kg of paddy purchased.¹³ The strengths and weaknesses of the present system are summarized below, by level.

The Collectors

4.09 The network of Collectors and buying points established by EIC has a number of positive features from the perspective of commercial operations as well as that of promoting production:

- a) Collectors are well established local businessmen who are very familiar with the producers and production patterns in their respective areas.
- b) As agents of SOMALAC, these Collectors enjoy the confidence of producers, particularly with respect to weights and measures but also because of the continuity of relationships through irrigation services, inputs and technical assistance.
- c) The physical capacity of this network, including storage facilities at some buying points is substantial.

4.10 There are, however, difficulties with the present system which prevent efficient performance of the purchasing function:

- a) There is a lack of incentives and control to induce peak performance; for example, Collectors have no sales targets, and no bonuses are paid for achieving or exceeding certain levels of purchases. There is, therefore, a degree of inertia in the activities of Collectors. They do not actively solicit deliveries, with the result that private buyers, and even other parastatals, are securing paddy which might otherwise be offered to EIC.
- b) Delays in the receipt of cash from SAP have occasionally shut down buying points.
- c) SAP and its Collectors cannot advance money to producers to secure future deliveries as some private traders do, as well as

¹³ In view of the working capital constraint currently faced by EIC, the policy this year was to evacuate paddy as quickly as possible from buying points, mill and sell it, so as to recycle funds to the purchase of additional paddy. The impact on volume purchased can be inferred from the fact that more than half of total purchases were made in the second half of the campaign, after the BIM line of credit was received. Prices were also higher at that time.

at least one parastatal (SORIFEMA). Nor have they the capacity to go to the producer's farm to collect paddy.

- d) Price adjustments during the season are reactive, and the price paid in commercial centers of the Region is usually at least FMC 10/kg below that paid by other buyers. Only in remote areas is EIC meeting or exceeding prices offered by competitors.

4.11 The combined effect of these factors is that paddy purchases are not commensurate with the level of expenditure. For example, the increase in buying stations from 97 in 1987 to 126 in 1988 coincided in a slight reduction in overall paddy purchases.

The Controllers

4.12 The use of EIC employees to identify Collectors, distribute cash, verify purchases and order paddy transport is a good concept in that it should afford the Division control over the caliber of individual performing the function and direct control over cash and paddy in the system. Furthermore, it should ensure continuity from year to year in these functions with attendant experience and efficiency. However, in practice there are problems that will need to be addressed if these advantages are to be realized:

- a) Despite the high level of responsibility of these individuals, the checks and controls on cash and paddy at this level are inadequate.
- b) As in the case of Collectors, there are no incentives such as purchase targets or bonuses to induce better performance.
- c) Changes in the procurement process and related accounting systems from year to year, limit the gaining of experience that should be expected from a stable cadre of Controllers.
- d) Each controller oversees the activities of about 25 Collectors. In the absence of rapid communication services and good accounting systems, it is unlikely that either efficient service or sound financial control can be exercised with this ratio.
- e) Post facto accounts invariably reveal irregularities, but there appears to be no consistent sanction for either Controllers or Collectors who abuse their office.

The Finance Section (SAP)

4.13 SOMALAC has performed a purchasing function for many years, and the personnel of the Section have come to know the production and marketing pattern of the Region very well. One would expect that this knowledge of function and market would show up in operating procedures and accounting systems that are both efficient and thorough.

4.14 However, these benefits have been thwarted by a number of factors:

- a) Lines of credit for paddy purchase have been either inadequate or late in the last several years, with the result that buying may be delayed, and is invariably slowed by the roll-over time of funds recycled from purchases and sales in the same season.¹⁴
- b) Accounting systems and procedures are cumbersome, resulting in delays in getting funds from the Section to Collectors.
- c) Personnel of the Section are not adequately trained or motivated to effectively manage the process. Since the procedures for paddy purchase change each year, there is no established routine to prevent confusion at the start of the season.
- d) There are no consistently applied rewards and sanctions to influence personnel performance. In addition to the issue of efficiency, there are significant discrepancies in cash and paddy each year for which no disciplinary action is taken.¹⁵
- e) Poor coordination with the Storage and Transport Service results in trucks often returning to mills with only 20% loads of paddy. (Lack of responsiveness on the part of STT was also reported)

Summary

4.15 EIC has the experience, physical capacity and knowledge of the market to enable it to perform a satisfactory paddy procurement function. However, for the reasons set out above, this function is not being performed well either in terms of EIC's commercial role or its adopted role of market stabilization. The conflicting objectives, poor employment practices and obscure decision processes that are evident in this operation are not unique to SOMALAC; they are often encountered in public enterprises trying to perform commercial functions.

¹⁴ This is a reflection of the overall credit worthiness of SOMALAC and EIC. Although EIC has repaid more than half of the loss of over FMG 3 billion in 1986, this debt, together with a large working capital loan from Government, has limited its borrowing capacity in the last two years.

¹⁵ SAP incurs losses each year as a result of differences between the paddy weight and quality recorded as purchases and those actually confirmed upon receipt at the mill. The shortfall this year was 86.4 tons. In addition, FMG 13.9 million in funds advanced to Collectors remained unaccounted for at the end of the season.

V. Milling Operations

5.01 EIC operates three rice mills with a total of five independent chains. The total installed capacity is 18 tons of paddy per hour, and rated capacity at last assessment was 13.3 tons per hour. This rated capacity is equivalent to 53,200 tons of paddy per season.¹⁶ Performance in recent years has been well below this level, for a number of reasons: Reduced paddy purchases; condition of equipment; availability of spares; skills and motivation of personnel; and, management structure and capability.

Summary of Processing and Storage Facilities

5.02 EIC's processing operations are conducted at three sites in the Region. The facilities at each are set out below:

Ambongalava

Processing lines:

- Schule (1972) 3.0 tons per hour installed capacity.
- Lewis Grant (1951) 3.0 tph installed.
- Yanmar Dehullers (1988) 2 @ 0.6 tph = 1.2 tons per hour.¹⁷

Power:

- Mercedes generator (1975) 250 KVA
- Two Volvo generators (1986) 150 KVA each.
- Lincoln boiler (1923) 100CV

Weigh Bridges:

- Alesco (1972) 30 ton capacity
- Kuan & Fleichel (1959) 15 ton capacity.

Storage:

- Three warehouses; total 7,750 sq. meters and 16,000 tons capacity

Amparafaravola

Processing lines:

- Schule (1956) 3.0 tph installed
- Huckauf & Bull (1963) 3.0 tph installed

Power:

- Divant generator () 160 KVA
- Volvo generator (1986) 150 KVA

Weigh Bridges:

- Kuan & Fleichel () 30 ton capacity

¹⁶ Based on 20 hr days and a 200 day season.

¹⁷ These dehullers were installed in the latter part of the year, and have only processed 16.5 tons of paddy.

Amparafaravola (continued)

Storage:

- Three warehouses; total 4,430 sq. meters and 15,000 tons capacity.

Manakambahiny

Processing Line:

- Huckauff & Bull (1952) 6.0 tph installed

Power:

- Caterpillar generator () 100 KVA
- Two Caterpillar generators (1986) 150 KVA each.
- Two Rosen & Babcock boilers (1923) 250 CV and a 110 KVA steam generator.

Weigh Bridges:

- P. Millier () 30 ton capacity.

Storage:

- Three warehouses; total 5,500 sq. meters and 16,000 tons capacity.

Assessment of Mill Performance

5.03 It is difficult, post facto, to distinguish the effects of the various factors that influence mill performance, but using proxies for different categories of factors can take us some way toward understanding what is currently happening. In the first instance, we shall use comparisons between theoretical, available and operating times to distinguish among the effects of key factors. We shall then comment on the condition of equipment, and conclude with an indication of the types of improvements that would be most effective, in physical terms, to improve performance. A comparison is also made with other public and private mills, as well as the small dehullers working in the Region. Detailed data on mill performance and yields appear in Annex 3.

Standard Season, Mill Openings and Operating time.

5.04 The standard operating season for rice mills in the Region is 200 days of 20 hours each. This provides for daily and seasonal maintenance and repair while gaining the best combination of semi-fixed and variable costs per unit of throughput, if paddy stocks are available. Mill start-up is usually not initiated unless paddy supplies and the condition of equipment are adequate to ensure fairly continuous operation. The number of days a mill is actually open during the season in relation to the available number of days can therefore reflect these two conditions.

Table 6.

Summary of Days Mills Open For Operation

	Ambongalava		Amparafaravola		Manakambahiny	Average
	<u>Schule</u>	<u>Lewis</u>	<u>Schule</u>	<u>Huckauf</u>	<u>Huckauf</u>	<u>Days</u>
(Based on conversion of recorded hours to 20-hr days)						
1985/86	(Ave. 73)		(ave. 77)		135	87
1986/87	(ave. 38)		n/a		18	35
1987/88	113	71	80	97	150	102
1988/89*	113	65	55	89	46	74

* 1988/89 based on figures through October, 1988.

5.05 Out of twenty mill-years surveyed in Table 6, in only four cases was a line open for more than 50% of the season. The Schule mill at Ambongalava has performed consistently best in the last two years, while the most noticeable improvement over the period has been in both that mill and the Huckauf line at Amparafaravola. Omitting the Ampar. 1986/87 years, EIC mills were only open for 41% of the standard season days available in the period.

5.06 The time that mills actually spent in operation was of course less than the period they were open. Even under the best of circumstances there will be breakdowns and other brief stoppages, but these should normally be very small in relation to available milling time. Table 8 shows that operating time was significantly less than the time the mills were open - almost 25% less over the survey period. Unexpected breakdowns are the principal cause of this shortfall, and a comparison of Tables 6 and 7 indicates that the problem has been consistently the greatest at Ambongalava, where the mills have operated less than 65% of the time they were open.

Table 7.

Summary of Time Mills Actually Operated

	Ambongalava		Amparafaravola		Manakambahiny	Average
	<u>Schule</u>	<u>Lewis</u>	<u>Schule</u>	<u>Huckauf</u>	<u>Huckauf</u>	<u>Days</u>
(Based on conversion of recorded hours to 20-hr days)						
1985/86	(Ave. 58)		(Ave. 62)		111	71
1986/87	35	24	n/a	n/a	17	28
1987/88	73	43	52	73	123	73
1988/89*	69	43	39	58	35	49

* 1988/89 based on figures through October, 1988.

5.07 It is noteworthy that the trend of days-operation/days-open for EIC mills as a whole is steadily down over the four seasons, from 82% in 1985/86 to 66% in the current season. This is not consistent with the fact that improvements have been made to at least some of the critical equipment during that time. It may be reasonable to ask whether management of SOMALAC has failed to reduce the open period of mills in relation to its declining paddy purchases, perhaps as a means of sustaining employment.

5.08 The current Technical Director of EIC and his counterpart maintain daily production run reports that permit more detailed examination of individual mill operations. These are useful in pinpointing specific pieces of equipment that cause the most frequent shut-downs, and other operational constraints, and they provide ample evidence of the importance of investments listed in Annex 3, Table 6, to the improved performance of the mills. However, it is necessary to recognize that equipment changes in and of themselves will not lead to satisfactory performance in EIC mills. Absenteeism and a generally lax approach to work are problems among personnel at all levels.

Milling Yields

5.09 Yield in the milling of rice is a function of the quality of paddy and the quality and operation of the milling equipment. Uniform paddy of the correct moisture content, when properly milled with rubber roller equipment can be expected to yield about 62% head rice and 8% broken kernels, with no noticeable bran content. Disc rollers, which account for the majority of EIC equipment, can yield up to 55% head rice and another 10 - 14% broken, clean kernels. In general, one should be looking for 67% - 70% rice yield, with no visible bran and broken less than 15%.

5.10 The total yield of EIC mills is within the specified range only when RUO (Riz Ordinaire) is being produced, but the quality of this product does not meet common international standards for milled rice. Some samples examined during the course of this study contained more than 50% broken kernels; more than half of the kernels had visible bran coating; kernels were uneven in size, and about 5% were off-colored; there was some husk material present, and dust and kernel fragments make up as much as 3% of the weight of the samples.

5.11 The yields expected by the management of EIC at present are as follows:

Ordinary Rice (RUO)	- 67 - 68%.
Table Rice (RT)	- 35% plus 31 - 32% grading discards (ET) that sell at small discount below Ordinary Rice.
Deluxe Rice (RL)	- 12% plus 20% Table Rice plus 20% grading discards.

Actual yields in recent years have approximated these figures, although they also indicate a gradual decline.

5.12 In summary, the yield and quality problems presently being experienced are the result of several factors:

- a) Paddy Quality Poor seed quality and pest control result in paddy that is mixed in grain size and shape, and has a high percentage of damaged grains. Harvesting and drying practices result in mould formation, pest damage and uneven moisture content. Foreign content is high, typically 3% or more, suggesting carelessness, and the nature of foreign material indicates intentional adulteration.
- b) Lack of Conditioning Especially in view of the poor quality of paddy to be milled, processing operations should begin with pre-cleaning, sorting and moisture standardization.¹⁸ Mills currently have only single or double stage cleaning that operates in continuous line with milling operations. Consequently, there is no opportunity to prepare standardized, clean lots of paddy for subsequent processing.
- c) The Age and Design of Hullers and Milling Equipment This equipment is very difficult to adjust and maintain at desired settings. As a result, both breakage and under-processing occur at the same time, even to a greater degree that would be expected because of the heterogenous paddy. Some of the older disc hullers are a particular problem because of their large diameter.
- d) Inadequate Separation The separation of components and unprocessed grain at different stages of milling is not adequate, with the result that some grain is subject to remilling, with the attendant breakage and loss, while hull and bran material is not completely removed from grain that moves to further processing and bagging. The separation equipment that is in place was probably satisfactory at the time of installation, for clean, uniform paddy, but it is inadequate for present conditions at EIC.
- e) Dust Removal and Ventilation The dust and small fragment content of grain in process is higher in these mills by virtue of the paddy and process issues described above. It is therefore even more important that systems to remove these

¹⁸ Excess moisture is not normally a problem, as paddy with high moisture content is usually rejected. However, with the need to operate on a revolving funds basis during part of the last season, the risk of uneven moisture content increased because paddy was processed rapidly, and any moisture standardization that might have occurred naturally during storage did not take place this year.

components - pneumatic sorters and evacuation fans - function effectively. While these are installed on some lines, none is performing to standard.

Priority Improvements to Milling Equipment

5.13 From the point of view of quality and yield, there are a number of improvements that should be made in order to maximize output and reduce operating costs. These relate directly to the problems presented in the preceding section, namely precleaning, cleaning, separation, mill adjustment, and dust removal. In May 1987, EIC prepared a detailed list of equipment and spare parts that would be needed to enable them to address these issues, and that list is summarized in Annex 3, Table 6. This package remains appropriate as a minimum rehabilitation investment.

5.14 This year EIC installed two Yanmar dehullers of 600 kg/hr capacity. In preliminary runs, they yielded 69.32% RUO. The cost of these machines, on an equivalent tonnage basis, is only a small fraction of the cost of conventional milling equipment, and they are adequate to produce a standard RUO grade. Independent of the issue of the future ownership and management of EIC, such dehullers should be considered in parallel with plans to exploit existing equipment.¹⁹

5.15 It is important that any investment in EIC mills be considered in the context of strategic decisions concerning the future ownership and operation of these facilities. However, it is clear that without rehabilitation, the physical plant will continue to limit performance even if management and personnel issues are resolved.

Comparison With Other Processors in the Region

5.16 EIC representatives indicate that there is a consumer preference for rice from SOMALAC. From a marketing perspective, this is an advantage that has not been exploited in terms of price differentials. But from the point of view of processing, this preference is the result of two factors: First, EIC has been more rigorous than most other suppliers in enforcing the modest standards for RUO and RT grades; second, private mills and dehullers are often paid for their service by retaining byproduct, and therefore have no incentive to separate hull, bran and grain components of the milled paddy.

¹⁹ These units are manufactured as stand-alone equipment, with dehulling and separating functions mounted in the same housing. For power efficiency, EIC's Technical Director proposes to separate these components, and to install banks of dehullers and separators each driven by a common power source.

5.17 The quality difference does not represent an inherent superiority in the capacity of SOMALAC milling equipment. The design and the range of ages in equipment is similar in most mills. There are differences in rated capacities in relation to installed capacities, but this is for the most part a reflection of the availability of spare parts and does not significantly affect quality. A summary of mills operating in the Region appears as Annex 3, Tables 4 and 5. A comparison of yields between EIC mills and those used as sub-contractors by EIC in recent years follows:

Table 8

Comparison of RUO Milling Yields

	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>
SOMALAC Mills	65.8%	68.3%	71.1%
Seven Other Mills	66.2%	66.4%	68.9%

From Annex 3, Table 5.

5.18 Yields vary among these mills by about 5% when processing ordinary rice. The SOMALAC mills improved their performance relative to other mills between 1984 and 1986, at which time their average yield was 2.2% better than that of the seven public and private mills contracted by SOMALAC to process a portion of its paddy. Although comparative data are not available for the last two seasons, SOMALAC yields were lower in both periods. (68.4% in 1987/88; and 68.7% in 1988/89)

5.19 During field work for the present study, the COROI mill was visited, as were a number of private dehullers, and interviews were conducted with individuals familiar with other public and private mills. The principal milling line at COROI is similar to that of EIC, although it does not suffer from a shortage of spares to the same extent. In addition, COROI has the advantage of a separate cleaning facility that permits the separation and preparation of uniform lots of paddy before processing.

5.20 Small private dehullers do not presently give rice yields as high as those of EIC mills, and there are design limitations to their performance. However, most of them are capable of producing ordinary rice with yields in the mid-60% range and do not do so now simply because of the terms of payment which discourage the maximizing of rice yield. An advantage of the small units in terms of the rice sector in the Region is that they do not have the infrastructure and fixed labor costs associated with large mills, particularly those in the public sector, and they can start up and operate for small lots of paddy. They can therefore operate year-round on an intermittent basis, serving the needs of small producers and those who

choose to retain a portion of their production for marketing in the off season.²⁰

5.21 Of the four larger private mills operating in the Region, three are included in the data in Annex 3, Table 5. Separating these from the four public mills in the "Other" category reveals that the public mills perform slightly better, but with a difference of less than 1%.

5.22 The network of small dehullers and private mills is not adequate at the present time to handle the paddy production of the Region, either in terms of volume or superior grades of output, but their further development should be encouraged. SOMALAC owns and operates 31% of the total milling capacity in the Region, excluding the dehullers (Annex 3, Table 4). The dehullers represent an economically efficient companion to larger mills in an overall processing industry for the Region. Construction is underway on a fifth private mill, and this category of ownership and processing combines the flexibility of lower costs, particularly labor and overhead, with the scope for improved processing for specialized rice and higher grades. Price differentials in the rice market will determine the extent of this development.

5.23 Our field visits, together with information concerning the nature of equipment in other mills in the Region, indicate that the installed capacity at SOMALAC is similar in design and condition to that of other mills, with some individual differences that have a marginal effect on quality. The importance of SOMALAC in processing is therefore principally the fact that it operates a large share of the capacity in the Region.

²⁰ An assessment of the economic merit of these dehullers would require, *inter alia*, information on the value of byproducts both in sale and in use. However, assuming byproducts valued at the price of paddy, a rough comparison between processing costs of SOMALAC and dehullers could be made as follows:

SOMALAC direct milling costs, 1988:	FMG 18.0
plus value of byproducts	
(7% valued at paddy price of FMG 150)	<u>10.5</u>
Total	<u>FMG 28.5/kg</u>

Small dehuller milling cost (based on 55% yield)	
SOMALAC yield 68% - dehuller yield 55% (13%)	
plus SOMALAC byproduct yield of 7%	
Cost therefore 20% of paddy, valued @ FMG 150/kg	
Total	<u>FMG 30.0/kg</u>

The small difference at this paddy price would be more than made up in this example with the charging of a share of EIC overheads to milling costs.

Summary

5.24 EIC's mills account for 31% of the processing capacity of the Region. They are ideally located in relation to producer concentrations and transportation facilities, and they are technically similar to other large mills in the Region. In terms of operating efficiency, labor charges are excessive and operating costs have also been adversely affected by shortages of paddy. Technical performance would be improved with the installation of pre-cleaning and separating equipment and an increased supply of spare parts. Overall, there is a shortage of qualified, motivated personnel, which contributes to inefficiency and higher costs.

VI. Marketing Operations

6.01 The marketing of rice and byproducts is the responsibility of the Service National de Vente (SNV). As Lac Alaotra has historically been a surplus rice producer, SNV has always marketed the majority of its production outside the Region, principally in Antananarivo and Tamatave. The clients served by SVN, and the system of marketing used have varied from year to year, reflecting for the most part changing perceptions on the part of SOMALAC management concerning its role in government policy for rice distribution, and uncertainty as to how best to meet its policy and commercial objectives. A brief description of these developments illustrates that the organization has not succeeded in establishing a consistent marketing strategy.

6.02 In 1983, SVN opened distribution points in the two major cities as well as in the Lac Region, and engaged in direct sales to consumers as well as sales to local governments, social groups, wholesalers and retailers. In the following year these points were closed, at the request of the World Bank, and sales were restricted principally to organized groups and licensed distributors, ex warehouse. The next year, sales by tender to distributors were continued, but private contract sales were also introduced.

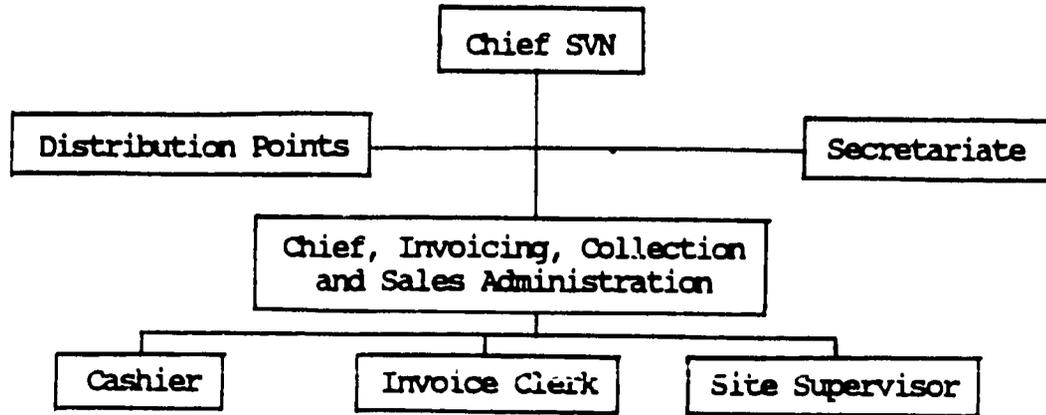
6.03 With the introduction of liberalized trade in rice in 1986, SVN began the season selling only ex warehouse, but poor sales resulted in the re-opening of distribution points later that year. Within the Lac Region, paddy collectors were also used as rice sellers. Another technique that year was to issue coupons to farmers selling paddy to EIC which allowed them to buy rice directly from the enterprise at a reduced price. In 1987, SVN began to respond seriously to the liberalization of rice trade: Sales were made to all types of buyers, from distribution points, and a branded product was introduced in one kilo bags. A small export shipment was also made that year.

6.04 This year, the need to generate funds rapidly for additional paddy purchase has led SVN to operate on a cash or cheque basis, with no sales on credit. Otherwise, the open marketing of product to all buyers remains officially in effect.

Organization

6.05 The organization of SVN that has been in effect for the past two years is presented in the chart on the following page.

Organization of SNV



Rice Sales Performance

6.06 EIC sales volumes and prices for recent years are summarized below:

Table 9

EIC Rice Sales

	<u>Ordinary</u>		<u>Table</u>		<u>Deluxe</u>		<u>Flour</u>	
	<u>Tons</u>	<u>Ave.FMG</u>	<u>Tons</u>	<u>Ave.FMG</u>	<u>Tons</u>	<u>Ave.FMG</u>	<u>Tons</u>	<u>Ave.FMG</u>
	'000	/kg	'000	/kg	'000	/kg	'000	/kg
1983	29.7	170	-	-	-	-	-	-
1984	66.6	185	-	-	-	-	-	-
1985/86	45.2	200	-	-	-	-	-	-
1986/87	3.3	420	0.2	540	0.5	590	-	-
1987/88	24.7	326	0.9	411	0.2	446	0.3	356
1988/89*	6.8	370	0.4	460	-	-	0.1	401

* Through 10/10/88.

6.07 Annex 4 presents monthly prices in Tana and Tamatave for RUO. (By December, prices in Tana had exceeded FMG 500/kg for ordinary rice, but EIC had sold all its rice prior to that time. In all other cases, with the possible exception of Tamatave/July and August, EIC prices were below those prevailing in the respective market, reflecting the reluctance discussed elsewhere to take advantage of market conditions to maximize the market value of the Region's paddy. Table 11 presents prices in Tana for the current year, indicating that EIC prices were below market levels by more than the wholesale and retail margins which must be taken into account on the majority of EIC sales. The are for the most part flush months, and EIC had sold all its production before the predictable price increases of December, when RUO prices topped FMG 500/kg.

Table 10

Ordinary Rice Prices -- Antananarivo, 1988

	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>
Market Price	414	408	412	418	445	469
EIC Average Price	368	371	366	376	386	383
EIC as % Market	89%	91%	89%	90%	87%	82%

6.08 In terms of sales administration, there are two major elements of concern: First, staff levels are too high for the volume of sales. Sales this year will be 519 tons per employee in SVN, and related salary costs will be about FMG 2,074 per ton. This item alone accounts for more than 2/3 of the budget figure for total fixed costs of FMG 3/kg. (SVN uses no seasonal employees. Second, accounting and control of cash and rice are inadequate. There are unexplained stock discrepancies each year, and credit management has not been able to prevent a build-up of bad debts. (FMG 250 million in 1987/88 alone)

The Results of 1986/87

6.09 In the first year of liberalized rice trade in the Lac Region, 1986/87, EIC took an aggressive position in paddy purchases and paid up to FMG 285 per kilo of paddy. Later that season, when rice prices in the two major cities were FMG 420 - 460, Government began selling donated rice from the stock tampon at FMG 360/kg. This had a serious effect on all other sellers, including EIC, which lost more than FMG 3 billion on the year's operations. (The break-even price for EIC that year was FMG 450/kg.)

6.10 Equally significant was the impact of these losses on the approach of SOMALAC to marketing strategy in subsequent years. The enterprise has been very careful to align itself with Government price policy, and to adopt a conservative posture in paddy markets to ensure that it has at least a modest margin between its raw material costs and the announced intervention price for rice. The result on the paddy supply side has been discussed in Section IV; the result on the marketing side is that SVN has not maximized its revenue on sales, and has become in effect an informal stock tampon.²¹ By selling its output in the early part of the season - before the end of the calendar year - SOMALAC protects itself against being caught with stocks when official stock tampon operations begin. However, in so doing it also removes itself from any stabilizing role during the scudure and from any additional margin that might be gained on sales between the flush season and period of official intervention.

²¹ The weighted average price in the first four months of this season is equal to the price at which the stock tampon is planned to come into operation.

The Need for a Market Strategy

6.11 Beyond the practice of selling rice early in the season, and at prices near the announced intervention price, SOMALAC does not appear to have a marketing strategy. It has experimented with different elements of a strategy, such as: introducing branded retail packages; partially filling an export order in 1987; alternating between emphasizing sales in Tana and in the Lac Region; and planning in the last several years to increase the share of higher grades in its output, but without success.

6.12 The influence of local political forces, informally as well as through the Comité Restreinte, have kept EIC from paying quality premiums for paddy and otherwise being selective in its purchases so as to provide the necessary raw material for a diversified marketing program. Although there have not been explicit directives from the national government concerning rice prices, management has inferred that it is not to take advantage of seasonally higher rice prices in the major consuming centers.²² These factors have given rise to an inertia on the marketing side similar to that which prevails in paddy purchasing, and the potential role of such a large intermediary to maximize the market value of Lac paddy has not been realized.

6.13 Irrespective of the future pattern of ownership and management selected for EIC, a marketing strategy must be developed, one which addresses at least the following aspects:

- a) Grades The Madagascar rice market is distinctly segmented in terms of grade preference and the purchasing power to express that preference. Even if EIC were to be expected to market ordinary rice at modest prices for the low and medium income population, it could develop profitable operations in higher grades, where the price differential exceeds the additional production costs by a significant margin.
- b) Customers At the present time, a large share of EIC rice is sold to preferred customers - government enterprises, elected officials and their families, and intermediaries who have access to this rice by virtue of their connections with government and elected officials associated with SOMALAC.²³ This rice is sold at less than prevailing

²² In 1988, EIC sold rice in Tana at FMG 360/kg until mid-October and then at 385 in mid-November. While its rice was not of the quality receiving the highest prices, the range in private sector prices in the second week of November was FMG 430 to 520 per kilo.

²³ This practice amounts to an administered allocation system, rather than one based on price, and it effectively removes these customers from the market place. SOMALAC is of course not the only parastatal that distributes rice in this manner, but the practice results in a dual market for rice, and

rates in the open market. Furthermore, in EIC's open market sales, the choice of level of customer - wholesaler, retailer or consumer - needs to reflect a commercial decision based on margins and costs associated with serving these customers.

- c) Packaging Economic development leads to several trends in the food industry that are important for producers: Retailers reduce their custom service to consumers, and consumers spend less time shopping with the result that they develop brand loyalty and a preference for pre-packaged goods. These trends mean that labelled retail packs grow in importance, and EIC needs to include more packaging and name association in its marketing strategy.
- d) Location EIC in the last several years has transported its production to Tana and Tamatave in the early part of the season, and gradually increased its sales in the Lac Region as its stocks decreased and the season progressed. There are indications that this results in unnecessary transport costs for EIC, as private traders are willing to buy rice in the Region and transport it to urban centers themselves. The control implicit in moving its own rice to market is perhaps not appropriate for EIC, and is almost certainly not necessary in the early part of the season when it is now done. The market strategy must include commercial decisions on the location and relative importance of outlets.
- e) Timing of Sales Financial constraints, and the concern not to be caught with stocks when the stock tampon begins to operate, have contributed to the practice of selling rice early in the season. A commercially-based strategy would include the phasing of sales based on cash flow needs and expected price trends as the season progresses. . .
- f) Export Markets Although the quality of rice that can be produced from the paddy presently produced in the Region would not be adequate for most international markets, there are opportunities in neighboring countries that have not been adequately explored. Also, as rice production increases in other parts of Madagascar, producers and traders in the Lac Alaotra Region should be looking increasingly toward higher quality production for export, and the enterprise that develops the knowledge and capacity to serve these markets first will be at a distinct advantage.
- g) Market Niches Each supplier to a market has comparative advantages in serving particular segments of that market. EIC needs to examine its own characteristics as a supplier, and relate those to market

increases the volatility of the open market by reducing the volume of rice and the number of buyers in that market.

segments it wishes to pursue.²⁴ It would be important in identifying such opportunities that factors other than preferential price be used to promote sales. Consistent quality, timeliness of delivery, proximity of outlets, as well as legitimate cost savings in freight, volume and purchasing could be some of these factors.

Strengths and Weaknesses of the Present Marketing System

6.14 EIC has a good physical network of outlets in the Region as well as in Tana, Tamatave and Moramanga. Through those outlets and the travel of its managers among consumer centers it has the capacity to develop a good market information network. The storage and transport capacity of the Division is also a distinct asset to any marketing effort. In each of these respects, EIC is better placed than either its private or public sector competitors.

6.15 However, the Division has not demonstrated the flexibility or responsiveness to market conditions that would permit it to take advantage of these features. As with other aspects of the Division's activities, it is important to recognize that EIC's marketing performance is the combined result of internal limitations with respect to personnel and systems, the actions of SOMALAC's central management, and exogenous factors - both local and national - that have not been effectively resisted in the pursuit of the enterprise's stated objectives.

²⁴ For example, EIC is able to deliver large quantities on fairly short notice; it has the storage and transport facilities to deliver large quantities to a customer's specification; its mills are presently suited best to processing the majority of its paddy into ordinary rice; it has preferential access to government organizations through the composition of its ownership and management; it has demonstrated a superior ability to produce rice to specification. These characteristics suggest that one niche would be large public sector users such as the military.

VII. Storage and Transport Operations

Equipment and Facilities

7.01 EIC operates a fleet of trucks and light vehicles for its purchasing and marketing operations, and warehouses at each of the mills. Transport equipment for paddy and rice, as of mid-1988, consisted of:

Table 11

	<u>Total</u>	<u>Operational *</u>
5-ton trucks	5	5
7-ton trucks	4	4
10-ton trucks	7	7
Tractors	9	8
Trailers	8	8

* Including those up for normal repair.

7.02 Even with the problems of scheduling paddy collection, and the difficulties that result from the requirement that the Director General personally authorize all trips outside the Region, this fleet is adequate for EIC's current needs.

7.03 The total capacity of warehouses at the three mills is 47,000 tons. The quality of this space is mixed, with pesticides being used to control rodents to a greater extent than should be necessary. However, with the reduced volume of throughput in recent years, there is ample scope for the selective use of the better space in each location. (As of mid-November, 1988, there were only 2,000 tons of paddy and rice in stock.) SST also operates small warehouses at buying points. These were set up in 1987, but control problems as well as the rapid turnover of paddy led to their not being used this year.

Summary of Key Issues

- 7.04
- a) There are too many personnel in this unit and, as with other units of EIC, the absence of incentives and sanctions preclude effective management of these people. Indicative of the surplus is the fact that the warehouses at buying points, though not in use, are still fully staffed.
 - b) The absence of effective accounting for quantities and qualities of paddy purchased reflect equally on the SAP and on the SST. Over-payment and pilferage at buying point cannot be distinguished from problems that arise between there and the weigh-bridge at the mill.
 - c) EIC vehicles are forbidden from hauling products other than rice and paddy owned by the Division. As a result, transport costs are

higher than they need to be because there are opportunities for back-haul to the Lac Region from Tana and Tamatave. Such opportunities are increasing with the rapid growth of the Region.

- d) Repair and maintenance of EIC vehicles is performed by EAE and paid for by EIC. EAE also provides about 10% of all repair service for the mills. There were some indications that this arrangement results in EIC vehicles and mills not receiving adequate or timely attention, but we did not examine the issue. Together with some transport service, the total cost of this agreement averaged FMG 500 million over the last four years. This level of interdependency among Divisions may be warranted, but its cost-effectiveness should be reviewed.

VIII. Financial Condition of EIC

8.01 Except for the 1986/87 season, EIC has generated an operating surplus in each year since the 1983 reorganization. In this sense, it is a viable operation. However, this is not in itself a measure of EIC'S financial well-being. One set of criteria usually applied in financial evaluation concerns efficiency or profitability. In the case of a private sector enterprise, the owners and creditors make these judgments in deciding whether or not to continue to fund its operations. In the public sector, performance is often judged on the basis of least-cost achievement of stated objectives. The other two sets of criteria normally used in financial evaluation are liquidity and credit worthiness. EIC has privileged access to capital for investment, operating costs and paddy purchases and is not routinely subject to these tests to qualify for these resources.

8.02 For EIC, then, the important financial tests are whether operations are performed at least cost, and whether they are performed within the set budget constraints . Performance with respect to efficiency has been the subject of preceding sections. There are a number of areas in which costs could be significantly reduced and revenues increased without reducing the quality of service, and these will not be repeated here, except to illustrate their significance in relation to the operating statements in para. 8.06. The implicit budget constraint imposed by the government has been that EIC be self-sufficient. In this section, we shall examine briefly the net flow of funds to EIC to illustrate that it has not achieved this objective.

Accounting and Reporting Procedures

8.03 It is important to point out that the records available from EIC, and from the accounting unit of SOMALAC, contain discrepancies and methodology problems which prevent an accurate assessment of EIC's present condition. In a recent evaluation of internal reporting, the external auditor, RINDRA, criticized EIC for failure to follow established procedures, particularly in sales, inventory, purchasing and payroll, and for failing to keep proper records of its operations. We share this concern, and must qualify any comment on the financial condition of EIC on the grounds that disclosure in the data is inadequate to permit a definitive assessment of the enterprise.

Operating Performance of EIC

8.04 The financial performance of EIC is constrained by two basic factors: Pricing policy with respect to both paddy purchases and rice sales which prevents the enterprise from maximizing its gross margin; and inefficiencies, particularly in personal management and the control of funds and inventory, which add greatly to operating costs. In addition, the reduced volume of throughput in the last several years has resulted in excessive fixed charges per unit of paddy processed.

8.05 The information contained in Table 12 was provided by EIC, and gives an overall indication of the financial results of operations since liberalization of the rice trade in Lac Alaotra. The loss of FMG 3.6 billion in 1986/87 greatly overshadows the modest surplus of 4% on sales in the preceding year and 12% on the reduced volume of 1987/88. It is interesting to note that the reported net income in 1987/88 represents a return of 165% on fixed assets. Comparison of these two figures on returns - 12% on sales and 165% on fixed assets - highlights the high variable costs of EIC operations and the extent to which it enjoys the benefit of depreciated plant and equipment.

Table 12

EIC Operating Statement
(FMG million)

	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>
Initial Stocks	1,720.1	556.6	3,876.1
Paddy Purchases	7,057.7	6,567.8	2,758.7
Personnel	355.0	343.6	474.0
Duties & Taxes	1.6	40.8	1.5
External Services	776.0	418.0	211.3
Transport	536.7	72.1	234.4
Management Charges	27.3	47.2	38.9
Finance Charges	494.6	829.5	1,138.7
Amortization	96.1	236.8	249.4
Provisions for Loss	302.3	-	109.4
Fees to SOMALAC	<u>228.2</u>	<u>-</u>	<u>n/a</u>
Total Costs	11,595.7	9,112.4	9,092.4
Final Stocks	556.6	3,876.1	754.8
Sales	11,430.8	1,627.2	9,409.6
Rebates	1.1	28.8	0.1
Sale of Assets	58.4	3.6	6.8
Interest & Dividends	<u>5.4</u>	<u>6.0</u>	<u>10.0</u>
Total Revenues*	12,052.2	5,541.6	10,181.3
NET INCOME	<u>456.6</u>	<u>(3,570.8)</u>	<u>1,088.9</u>

* Note that adjustments in stocks are included in the operating statement as presented by EIC.

8.06 Table 12 can also serve to illustrate the order of magnitude of efficiency gains that could be realized in EIC operations. If, for example, personnel charges had declined over the period in relation to paddy processed (Annex 3, Table 3), and if credit control had prevented the need for bad debt provisions, the impact of these two changes alone in 1987/88 would have been an increase of 44% in net income. The seven fold increase

in initial stocks between 1986/87 and 1987/88, if financed at the current rate of 14.5% would account for about FMG 480 million of the finance charges in the latter year. Together, these three factors - disproportionate personal costs, bad debts, and excess stock - account for about FMG 950 million in 1987/88, or about 40% of total operating costs exclusive of paddy purchases. Operating statements for 1983 to 1988/89 appear as Annex 6, Table 1. In Table 2 of that Annex the operating statements for 1984/85 through 1987/88 have been recast in a more usual commercial form.

8.07 A comparative balance sheet for April 30/1986, 1987 and 1988 appears as Table 3 in Annex 6. It indicates that EIC's net worth deteriorated over the period and is now negative (-FMG 494.8). This is despite dotations and subventions which had a net value at 4/30/88 of FMG 1,275.7. The total book value of plant and equipment at that date was FMG 677.9 million, of which FMG 414.3 million, or 61%, was transport equipment.

8.08 The book value of warehouses, mills and milling equipment was FMG 255.5 million at April 30, 1988, compared to a reported acquisition cost of FMG 662.1 million. In 1985, SOMALAC commissioned an appraisal of its mills, at which time land, plant and equipment were valued at FMG 4,629 million.²⁵ The purpose of this appraisal is not clear, and it was based on contemporary costs less estimated deterioration rather than the value of the assets as part of a going concern. Nevertheless, it illustrates the extent to which the market value of EIC's facilities may exceed their book value.

Financial Relationship With Government

8.09 The accounting and reporting problems referred to above affect the transactions between the Division and the Government in the form of dotations and subventions. However, data that were available to us indicate a continuing flow of funds to the Division for the purchase of fixed assets and chattels and for operating costs. As of April 30, 1988, the balance sheet indicates a net value of dotations of FMG 1,117.9 and subventions of FMG 157.8 million. In addition, the Government extended a long-term loan to EIC of FMG 2 billion to repay a portion of the BIM debt incurred as a result of the 1986/87 operations. This represents a net exposure, at book value, of FMG 3,275.7 million. In addition, Government owns shares in SOMALAC valued on the books at FMG 170 million, which we assume are represented pari-passu in the ownership of EIC.

8.10 In trying to track these flows over the last several years, we find that accumulated depreciation, depreciation expense, and changes in the related government capital accounts cannot be reconciled. Without this information, the share of the present book value of assets that has been

²⁵ Societe Malgache d'Expertise; No's 80/85, 81/85, and 82/85

financed by Government cannot be established.²⁶ The information we extracted from the financial statements of EIC with respect to fixed assets, subventions and dotations appear in Annex 6, tables 4, 5 and 6, respectively.

Summary

8.11 The auditing of SOMALAC is currently running about 18 months behind a normal schedule. This may be in part a result of the difficulty in tracking transactions. However, we also find that in the work of the auditors, more consistent use should be made of notes to financial statements. These are an essential element of the disclosure required of normal accounting principals, and help to identify the impact of accounting errors on the stated condition of the enterprise.

8.12 On the basis of the information available to us, it is evident that EIC continuously depends on funds from Government to finance a share of its fixed assets and operating costs, that its operating surplus in normal years is modest in relation to sales volume, and that the financial impact of efficiency measures could be significant. Accounting records are not kept in a manner consistent with normal accounting principles, nor is the degree of disclosure in financial statements. It is our opinion that additional work must be done in several specific areas before the condition of EIC can be accurately assessed:

- a) Asset financing and depreciation,
- b) Flow of funds between SOMALAC and EIC.²⁷
- c) Flow of funds from Government to EIC for investment and operating costs, and the relationship of these capital accounts with the acquisition cost and book value of the assets so financed.
- d) Legal status of different equity holdings in SOMALAC, and their pro rata participation in EIC.
- e) Valuation of assets used jointly by EIC and other Divisions of SOMALAC.

²⁶ Many of these assets were financed by Government out of the proceeds of World Bank loans, and it may be that the audit covenants of this creditor will result in accurate accounts in due course.

²⁷ EIC pays a fee in most years to SOMALAC for management and common services. This exceeds flows from the SOMALAC in most cases, but recording in the consolidated statements of SOMALAC is not consistent. The result is to imply a drain on the central organization when this is not the case.

IX. Summary and Conclusions

9.01 The Industrial and Commercial Division of SOMALAC has acquired an intimate knowledge of the paddy and rice markets in Lac Alaotra and of the rice market in Madagascar. It operates about one third of the processing capacity in the Region and has a good physical network for collection and distribution. However, we find that constraints of an organizational, managerial and physical nature have prevented this enterprise from performing an efficient commercial service for its suppliers and owners. We also conclude that ambiguity or conflict among the various roles expected of EIC by different parties has resulted in uncertainty and inertia in the operations of the enterprise. Our specific conclusions are as follows:

9.02 Strategic Importance of EIC Private sector response to the liberalization of rice trade in the Lac Alaotra Region has effectively removed any strategic role for EIC in the regional paddy market, with the possible exception of small isolated areas of production that might not otherwise be served directly by buyers. There is nothing inherent in EIC's processing operation to distinguish it consistently from other millers. In the rice trade, EIC functions as an informal stock tampon, a role which is not compatible with its commercial responsibilities, nor is it in the best interests of the producers served by SOMALAC.

9.03 Level of Autonomy EIC has no strategic autonomy in relation to the Direction Generale of SOMALAC, and must refer many daily operating decisions to that level. As the business end of SOMALAC, EIC is an important tool for the institution in satisfying the interests of local and national officials who wish to see the flow of funds used to further both policy objectives and other shorter-term interests.

9.04 Management It is difficult to assess EIC's management in the context of its limited scope for initiative and responsibility, but there are individual managers who could perform well if sanctions and rewards were in place. Others do not possess the requisite skills. Control of personnel, funds and inventories is inadequate.

9.05 Personnel There are too many people on the payroll of EIC, and their performance is generally poor. While employment laws are a factor in the failure of EIC to reduce its permanent staff, so too is the influence of local officials on the operating decisions of the organization. The quality of performance reflects the absence of any system of reward and sanction.

9.06 Asset Base EIC has a larger asset base for the transport, storage and processing of rice products than is warranted by its present level of activities. The condition of these, particularly the mills, contributes to higher operating costs and lower yields on throughput.

9.07 Paddy Purchases This is a passive activity, poorly controlled, that contributes to the reduced volume of throughput by EIC. The absence of incentives or controls contribute to disinterest and abuse.

9.08 Processing Capacity In contrast to the rated capacity of 13.3 tons per hour, actual capacity in the first four months of this year was only 11.5 tons per hour for time actually worked, and the mills only operated 41% of the available time. Limited paddy supply was a factor in performance this year, but breakdowns, obsolescence, material control and the management of personnel were other factors. Key maintenance and repair personnel are to be commended for keeping much of this equipment in operation. In the context of other strategic decisions concerning EIC, consideration should be given to selective investment in the rehabilitation of these mills.

9.09 Quality of Product The quality of rice is not adequate to compete in international trade except perhaps in low-priced regional markets. The quality of paddy and the condition of milling equipment result in unsatisfactory bran removal, off-colored grains, lack of uniformity, and a high percentage of broken grains. The quality of ordinary output is such that the milling ratio is not a meaningful indicator of mill performance.

9.10 Rice Marketing EIC has an implicit marketing strategy similar to that of a stock tampon. There is no attempt to maximize sales revenue. Strategy and price decisions are taken by the Comite Restreint of SOMALAC. These conditions result in indecisiveness, and an administrative approach to marketing on the part of SVN managers and staff.

9.11 Accounting System Records are not adequate for either control or management purposes. The present Director has developed automated records that track purchases and sales, but equipment and personnel problems prevent their adoption on a regular basis. The present manual system is cumbersome and subject to abuse; it is time-consuming, and it is not used to generate information that can assist managers.

9.12 Financial Condition The condition of EIC cannot be evaluated with confidence on the basis of present accounting information. We recommend that the owners and concerned managers meet with SOMALAC's external auditors to establish a program of accelerated auditing and the introduction of an accounting system based on valid source documents and processing procedures. The accurate separation of EIC from the rest of SOMALAC would not, in our opinion, represent a difficult task if correct procedures were in place for recording the funding and depreciation of assets. Facilities in common use are a small and readily identifiable set of assets.

9.13 Sector Constraints Assuming that Government will continue to take an active part in the rice sector, there are several policy issues that will need to be addressed if the environment is to be conducive to improved performance by any future operation of the assets of EIC. These include:

- a) Clear enunciation of buffer stock management and market intervention policy.
- b) Clarification of the role of the paddy floor price.
- c) Introduction of paddy quality incentives.

Issues to be Considered in Developing Alternative Scenarios for EIC

9.14 The evaluation of present conditions and performance within EIC gives rise to a number of issues to be examined in developing alternative scenarios for the future of this organization. In addition to those implicit in the present report, there are the following, assembled from interviews and materials reviewed by the evaluation team:

- a) The extent and efficacy of a stabilization role for EIC in the Regional paddy market.
- b) The role of EIC in the price policy of Government in the rice sector.
- c) The possible role of EIC in relation to the management, processing and sale of national security stocks of rice.
- d) The salvage or market value of EIC assets in relation to their production potential.
- e) Asset valuation, and the prospect of recovering State equity in the event of the sale of EIC.
- f) Authoritative assessment of EIC's financial condition.
- g) Responsibility for liabilities in the event of capital restructuring.
- h) The potential impact of alternative legal forms of organization on the accountability of managers and the efficiency of decision-making.
- i) The political and adjustment aspects of the reduction of staff that will almost certainly be required in any viable alternative.

1. The proposed study will examine the possible options for the EIC's restructuring in light of the evaluation of national and international rice production and marketing, and will be concluded with the development of an action plan to realize the one option selected by the Government of Madagascar for the future of the EIC.
2. Factors that the Government of Madagascar wishes to be taken into consideration in the future restructuring of SOMALAC are:
 - (a) The regulating role that SOMALAC can play on the paddy market by virtue of being a dominant purchase;
 - (b) The mission that SOMALAC could assume by constituting, storing and processing, at the request of the state and on a fee-for-service basis, all or part of the national security stock;
 - (c) The extremely low monetizable value of the industrial installations in comparison with the value added that they can generate;
 - (d) The extremely low monetizable value of the industrial installations in comparison with the value added that they can generate; and
 - (e) The objective's and motivations of potential buyers and managers.

The detailed scope of work for the study follows:
SCOPE OF WORK

3. The study will be undertaken in three phases:
 - Phase I. A phase for the evaluation and diagnostic of the EIC's problems and potentials;
 - Phase II. A phase for the elaboration of possible options for the future operation of EIC, executed in collaboration with the two other consulting firms responsible for the study of the canal management and maintenance and of the research and extension establishments, respectively; and
 - Phase III. A phase in consultation with the two other consulting firms for the development of a detailed description of the new structure, and a plan for its implementation, of the option selected by the GORM following review of the report prepared at the end of Phase II.

4. The Consultant will undertake the specific activities described below:

Phase I: Evaluation and Diagnostic. The evaluation will concern the realizations of the 1983-87 period; a technical and commercial analysis of SOMALAC's rice mills in relation to the operations of other industrial and small rice mills in the region; and an analysis of the legal aspects, social impact questions and of necessary undertakings to clear up the EIC's liabilities vis-a-vis the state.

5. The Contractor will:

- (1) Review legal documents and all financial and physical progress reports of EIC for the period 1983-1987, as well as all relevant studies including one completed by a team of experts in 1985 on rehabilitation needs, and more recent reports on the organization of the national rice market and on rice export opportunities;
- (2) Interview members of the staff of EIC and of the General Direction of SOMALAC, farmers and independent traders in the zone, and representatives of the supervisory ministry - MPARA - to gain a complete understanding of the functioning of the EIC, its organization objectives, its capabilities (physical facilities, personnel and financial resources), its problems and its relationship with the central government and national policies; and
- (3) Assess the national and international market prospects for rice and SOMALAC's potential role in those markets.

6. The diagnostic will focus, in particular, on the capacity of the current structure of the EIC to adapt itself to the foreseeable evolution of production, processing and trade (national and international) of rice.

Phase II - Proposal of Scenarios in Consultation with the Other Consulting Firms

- (1) Per consultation with the two other consulting firms, outline the possible scenarios for the future of the EIC, describing the advantages and disadvantages of each, from the point of view of:
 - The State, as owner of the facilities;
 - The National Rice Policy;
 - The development of the region; and
 - The interests of the farmers, the mill operators and commercial operators.

To permit an evaluation of the consequence of each scenario for SOMALAC on the institutional, financial and social levels. The contractor shall define for each scenario, the:

- (a) Judicial aspects;
- (b) Social impact; and
- (c) System for the financial rehabilitation of the EIC;

and shall present an estimation of the markets, domestic and foreign for SOMALAC rice.

- (2) Prepare an interim report which summarizes the conclusions of the diagnostic study and presents the options for the future as described in (1) above. This report should contain enough information to permit the Government of Madagascar to make an informed decision on which option to select;
- (3) During the four weeks following the transmittal of the interim report to the Government, the consultants should be accessible to respond to any questions the Government may have;

Within one month of the receipt of the interim report, the Government of Madagascar will select one option, will notify the consultant of its choice, and will provide instructions for the execution of the third phase.

Phase III - Elaboration of the Restructuring Plan

- (1) The justification and description of the selected option;
- (2) A delineation of the proposed institutional structure;
- (3) International organization and external linkages;
- (4) A financial table following the general accounting plan for 1987;
- (5) Identification of the legal structure and ownership;
- (6) Human and material requirements;
- (7) Provisional accounts following the general accounting plan for 1987; and
- (8) An implementation strategy and schedule.

Size of Holdings
Cultivated for Rice Production
%

Ha	Lac	North	West	Andila*	East	South
0-5	70	50	37	72	100	89
5-10	22	45	37	19	-	8
10+	8	5	26	9	-	3
Average sales farmer (FMS 000)		658	758	458	90	23.6

* 62% cultivate 2 ha or less.

Paddy Prices in Lac Alaotra

ANNEX 2

Table 2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-----1988-----												
Andilamena	0	0	0	0	0	0	146	150	0	170	0	0
Ambatondrazaka	0	0	0	0	150	152	158	170	170	195	0	0
Amparafaravola	0	0	0	0	150	163	164	188	196	199	0	0
Moramanga	0	0	0	0	138	150	150	0	0	0	0	0
Taatave average					146	155	154	156	183	188		0
-----1987-----												
Andilamena	0	0	0	0	0	0	0	0	0	0	0	0
Ambatondrazaka	0	0	0	0	0	0	125	132	167	238	250	283
Amparafaravola	0	0	0	0	0	0	0	120	120	120	120	0
Moramanga	0	0	0	0	0	0	0	0	0	0	0	0
Taatave average	514	411	302	342	257	215	266	302	267	343	415	258
Nat'l Average	387	293	319	266	192	170	187	179	193	221	155	255
-----1987-----												
Taatave												
Ambatondra	282	355	305	172	113	113	167	204	165	241	375	300
Average	279	338	354	285	180	168	259	200	356	290	263	342
Nat'l Average	321	352	343	272	217	197	224	246	293	313	332	335

! "0" indicates no purchases, or data not available.

!! As data appear in OSA report, but not correct.

!!! Source: MPARA/SMTIS.

Paddy Collection in Madagascar
(by season)

†

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89
	-----tons-----					
Coroi*	2,474	5,920	1,112	6,575	10,061	6,662
Fifabe	15,776	21,504	4,936	8,289	4,712	3,313
Roso*	2,162	1,929	1,418	445	1,119	58
Samangoky	0	0	0	42	410	0
Sice*	2,242	4,001	2,865	859	1,533	0
Sinpa*	0	8,471	8,819	15,488	43,530	23,107
Soama	0	0	0	300	201	320
Sogedis	0	0	0	353	29	0
Somacodis*	7,000	5,391	5,784	12,775	19,112	15,332
Somalac**	77,484	64,798	65,000	29,009	19,962	19,589
Sorifema**	0	0	0	698	4,370	0
Total State Ent.	107,138	112,014	89,934	74,833	105,039	68,381
Private collectors*	50,172	42,989	20,090	38,975	33,971	19,228
TOTAL	157,310	155,003	110,024	113,808	139,010	87,609

Source: Division de Securite Alimentaire, MPARA.

* Including Lac Alaotra Region.

** Exclusively Lac Alaotra Region.

NB: SOMALAC, 1987/88 - DSA figure of 48,555 not correct,
therefore used SOMALAC figure.

NB: Reporting by private traders incomplete and understated.

Paddy Collection
(1988/89)

	National	Tamatave	% Tama.
Coroi	6,662	5,909	88.7%
Fifabe	3,313	0	0.0%
Roso	58	0	0.0%
Samangoky	0	0	0.0%
Sinpa	23,107	16,568	71.7%
Sirama	320	0	0.0%
Somacodis	15,332	11,914	77.7%
Somalac	19,589	19,589	100.0%
Total Soc. Etat	68,381	53,980	78.9%
Private	19,228	4,128	21.5%
TOTAL	87,609	58,108	66.3%
SLAC as % Soc. Etat	28.6%	36.3%	
SLAC as % Total	22.4%	33.7%	
Adjusted for Under-reporting of Private Trade (4 x reported)			
Private	76,912	12,512	
TOTAL	145,293	70,492	
Somalac % Total	13.5%	27.8%	

SOMALAC
Summary of Mill Capacities

	Ambongalava		Amparafaravola		Makambahin Huckauf
	Schule	Lewis	Schule	Huckauf	
Installed Capacity	3.0	3.0	(tons/hour)		
Rated Capacity	2.5	2.5	3.0	3.0	6.0
			1.4	1.9	5.0
Actual Performance					
1985/86		5.6		3.0	
1986/87	4.0	2.3	n/a	n/a	4.7
1987/88	2.2	2.2	1.6	2.3	3.5
1988/89*	2.4	2.0	1.5	2.2	3.7
					3.4
Hours Worked					
1985/86		2330.1		2499.0	2212.3
1986/87	701.4	485.3	n/a	n/a	345.0
1987/88	1456.9	868.3	1048.4	1466.6	2466.0
1988/89*	1381.4	865.0	775.7	1168.4	697.7
Equiv. 20-hr Days					
1985/86	ave. 58.3		ave. 62.5		110.6
1986/87	35.1	24.3	n/a	n/a	17.3
1987/88	72.8	43.4	52.4	73.3	123.3
1988/89*	69.1	43.3	38.8	58.4	34.9

Total installed capacity: 18.0 tons per hour
Total rated capacity: 13.3 tons per hour

* Through October, 1988.

SOMALAC
Summary of Mill Performance
1985/86

	Hours open	Hours actual	T/paddy mill	T/hr Actual	T/hr open
Ambongalava	2,852.0	2,330.1	13,047.7	5.6	4.6
Amparafaravola	3,060.0	2,499.0	7,591.9	3.0	2.5
Manakambaniny	2,700.0	2,212.3	12,396.0	5.6	4.6
TOTAL	8,612.0	7,041.4	33,035.6	4.7	3.8

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SOMALAC
Summary of Mill Performance
1986/87

	Hours open	Hours actual	T/paddy mill	T/hr Actual	T/hr open
Ambongalava-Schule					
RUD	551.5	439.7	2241.9	5.1	4.1
RUB	288.0	230.3	519.3	2.3	1.3
RL	48.0	31.4	55.7	1.6	1.2
Subtotal	887.5	701.4	2,816.9	4.0	3.2
Ambongalava-Lewis					
	615.0	485.3	1,097.7	2.3	1.8
Ambonga-total	1,502.5	1,186.7	3,914.6	3.3	2.6
Manakambahiny-Huckau					
	350.0	345.0	1,502.2	4.4	4.2
TOTAL	1,852.5	1,531.7	5,416.8	3.5	2.9

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SOMALAC
Summary of Mill Performance
1987/88

	Hours open	Hours available	Hours actual	T.paddy mill	T/hr act	T/hr avail	T/hr open

Ambongalava-Schule							
RL	624.0	528.0	87.6	659.6	1.6	1.2	1.1
RT	336.0	240.0	174.6	335.3	1.9	1.4	1.7
RUD	1,272.0	1,080.0	364.8	2,137.6	2.6	2.0	1.7
Subtotal	2,232.0	1,848.0	1,127.0	3,132.7	2.2	1.7	1.4
Ambongalava-Lewis							
RUD	1,416.0	1,224.0	366.3	1,927.5	2.2	1.6	1.4
Amparafara-olia-Schule							
RT	780.0	608.0	507.5	650.3	1.3	1.1	0.8
RUD	816.0	656.0	540.9	1,053.0	1.9	1.6	1.3
Subtotal	1,608.0	1,264.0	1,048.4	1,713.3	1.6	1.4	1.1
Amparafara-olia-Huckauff							
RUD	1,844.0	1,624.0	1,466.6	3,396.0	2.3	2.0	1.7
Manakambahun-Huckauff							
RUD	3,000.0	2,617.4	2,466.0	5,124.3	3.7	3.5	3.0
TOTAL:	10,200.0	8,637.4	7,306.2	19,297.3	2.6	2.2	1.9

Go

SOMALAC
Summary of Mill Performance
(1989/90 thru October 1989)

	Hours oper	Hours available	Hours actual	T.paddy mill	T/hr act	T/hr avail	T/hr oper

Ambongalava-Schule							
RL	624.0	520.0	398.3	795.7	2.0	1.5	1.7
RUD	1,508.0	1,288.0	783.1	2,487.2	2.5	1.7	1.5
Subtotal	2,232.0	1,808.0	1,381.4	3,282.9	2.4	1.6	1.6
Ambongalava-Lewis							
RUD	1,320.0	1,196.0	865.0	1,699.9	2.0	1.4	1.7
Ambanga-Total	3,552.0	3,004.0	2,246.4	4,982.8	2.2	1.7	1.4
Amparafaravola-Schule							
RT	532.0	440.0	351.5	436.6	1.2	1.0	0.8
RUD	552.0	480.0	424.2	742.7	1.8	1.5	1.7
Subtotal	1,104.0	920.0	775.7	1,179.3	1.5	1.3	1.1
Amparafaravola-Huckauf							
RT	72.0	32.0	25.5	51.8	2.0	1.5	0.7
RUD	1,698.0	1,328.0	1,142.9	2,502.6	2.2	1.7	1.5
Subtotal	1,770.0	1,360.0	1,168.4	2,554.4	2.2	1.7	1.4
Ampara-Total	2874	2280	1944.1	3733.7	1.9	1.6	1.3
Manatambaninv-Huckauf							
RUD	912.0	824.0	697.7	2,401.3	3.4	2.9	3.6
TOTAL:	7,338.0	6,108.0	4,888.2	11,117.3	2.3	1.9	1.6

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SOMALAC
Summary of Milling Yields

(As % Of Paddy in Specified Grade Rice)

1. RUO (Ordinary Rice)	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>	<u>1988/89</u>
Ambongalava - Schule		71.53	68.26	69.01
- Lewis	(ave. 71.43)	70.74	68.32	68.47
- Yanmar	-	-	-	69.38
Amparafaravola - Schule		-	68.84	68.82
- Huckauf	(ave. 70.79)	-	68.16	69.23
Manakambahiny - Huckauf	70.95	68.67	68.38	68.06
2. RT (Table Rice)				
Ambongalava - Schule	-	-	32.24	33.70
Amparafaravola - Schule	-	-	37.24	33.24
- Huckauf	-	-	-	34.43

RUO is poorly milled, with high bran content, some dust and small grain particles, and up to 50% broken.
RT has only traces of bran and brokens of about 10%

SOMALAC
Yield on Milling Operations 1986/87

	<u>Tns. Paddy</u>	<u>Tns. Yield</u>	<u>Tns Yield ET/a</u>	<u>% Yield</u>
Ambongalava - Schule				
RL	55.7	22.9	14.2	66.61%
RT	519.3	288.9	61.6	67.49%
RUO	1144.2	818.5	0	71.53%
Sub-Total	1719.2	1130.3	75.8	70.15%
Ambongalava - Lewis				
RUO	1097.7	776.5	0	70.74%
Manakambahiny - Huckauf				
RUO	1502.2	1031.6	0	68.67%
Total	4319.1	2938.4	75.8	69.79%
Of which - RL	55.7	22.9	14.2	66.61%
- RT	519.3	288.9	61.6	67.49%
- RUO	3744.1	2626.6	0	70.15%

/a See 88/89.

/b See 88/89.

SOMALAC
Yield on Milling Operations 1987/88

	<u>Tns. Paddy</u>	<u>Tns. Yield</u>	<u>Tns Yield ET/a</u>	<u>% Yield /b</u>
Ambongalava-Schule				
RL	659.8	75.1	321.6	60.12%
RT	335.3	108.1	105.8	63.79%
RUO	2137.6	1459.1	0.0	68.26%
Sub-total	3132.7	1642.3	427.4	66.07%
Ambongalava-Lewis				
RUO	1927.5	1316.8	0.0	68.32%
Amparafaravola-Schule				
RT	660.3	245.9	163.6	62.02%
RUO	1053.0	724.9	0.0	68.84%
Sub-Total	1713.3	970.8	163.6	66.21%
Amparafaravola-Huckauff				
RUO	3396.0	2314.8	0.0	68.16%
Manakambahiny-Huckauff				
RUO	9124.3	6239.6	0.0	68.38%
Total	19293.8	12484.3	591.0	67.77%
Of which - RUO	17638.4	12055.2	0.0	68.35%
- RT	995.6	354.0	269.4	62.62%
- RL	659.8	75.1	321.6	60.12%

/a See 88/89.

/b See 88/89.

SOMALAC
Yield on Milling Operations 1988/89

	<u>Tns. Paddy</u>	<u>Tns. Yield</u>	<u>Tns Yield ET/a</u>	<u>% Yield /b</u>
Ambongalave-Schule				
RT	911.4	307.2	275.4	63.92%
RUO	3746.0	2585.1	0	69.01%
Sub-Total	4657.4	2892.3	275.4	68.01%
Ambangalava-Lewis				
RUO	2476.8	1696.3	0	68.49%
Ambongalava-Yanmar				
RUO	26.4	18.3	0	
Ambanga-Total	7160.6	4606.9	275.4	68.18%
Amparafaravola-Schule				
RT	699.9	247.3	191.5	62.69%
RUO	1177.3	810.3	0	68.83%
Sub-Total	1877.2	1057.6	191.5	56.34%
Amparafaravola-Huckauf				
RT	94.5	39.0	20.8	63.28%
RUO	3803.5	2633.3	0	69.23%
Sub-Total	3898.0	2672.3	20.8	68.56%
Ampara-Total	5775.2	3729.9	212.3	68.26%
Manakambahiny-Huckauf				
RUO	5257.3	3578.1	0	68.06%
Total	18193.1	11914.9		65.49%
Of which - RUO	16487.3	11321.4	0	68.67%
- RT	1705.8	593.5	487.7	63.38%

/a Broken, screened after milling higher grades.

/b Yield for RT includes ET. Actual RT yield in 1988/89 was 34.8%.

Mills Operating in the Lac Alaotra Region

	Capacity			Storage Capacity		
	(Install) t/hr	(Rated) t/hr	(Rated) t/yr*	Paddy	Rice	Byprod
SOMALAC						
Manakambahiny				20,000	700	100
- Huckauf (1953)	6.0	5.0	15,000			
Ambongalava				16,000	300	150
- Schule (1972)	3.0	2.5	7,500			
- Lewis (1951)	3.0	2.5	7,500			
Amparafaravola				7,000	200	100
- Schule (1956)	3.0	1.4	4,200			
- Huckauf (1963)	3.5	1.9	5,700			
Total SOMALAC			<u>39,900</u>	<u>43,000</u>	<u>1,200</u>	<u>350</u>
COROZ						
- Schule (1951)	5.0	4.5	13,500	40,000	500	-
- Schule (1970)	2.0	1.6	4,800			
- Schule (1970)	2.0	1.6	(check)			
ROSO						
- Huckauf (1968)	3.5	2.0	6,000	6,000	600	300
SORIFEMA						
- Schule (1959)	3.0	1.9	5,700	10,000	4,000	1,000
- Lafon (1950)	1.0	0.3	900			
SINPA						
- Schule (1973)	5.0	3.0	9,000	16,000	700	250
- Schule (1954)	2.5	2.3	6,900			
Ramahandry						
- Koarbar (1960)	3.0	2.6	7,800	7,000	600	400
Ravonjarivalo						
- Teisset (1965)	2.0	1.2	3,600	3,000	500	200
Rasolcarijao						
- Schule (1930)	2.5	2.3	6,900	7,700	1,000	550
- Schule (1969)	2.1	1.9	5,700			
Total Other Mills			<u>70,800</u>	<u>89,700</u>	<u>7,900</u>	<u>2,700</u>
Total Region			<u>110,700</u>	<u>132,700</u>	<u>9,100</u>	<u>3,050</u>

Source: EIC, except rated capacity per year.

* Rated capacity per year is based on operating 75% of standard season at rated hourly capacity.

Comparison of EIC and
Other Mills

	Paddy Milled	Prod'n RUO	Yield
1983/84			
SOMALAC	26.7	17.6	65.9%
Other Mills	35.1	23.3	66.4%
1984/85			
SOMALAC	36.9	25.8	69.9%
Other Mills	24	16.1	67.1%
1985/86			
SOMALAC	35.8	25.5	71.2%
Other Mills	26.7	18.4	68.9%
1986/87			
SOMALAC	8.1	5.6	69.1%
Other Mills	0	0	n/a

Source: EIC, May, 1987

PRIORITY INVESTMENTS TO IMPROVE RICE MILL PERFORMANCE

Nombre

4	NETTOYEURS SEPARATEURS DE CAPACITE 8.T/H. AVEC ASPIRATION VENTILATEURS CYCLONES, ECLUSES.
3	DECORTIQUEURS A ROULEAUX CAOUTCHOUC DE 10 POUCES AVEC SEPARATEURS A CIRCUIT PNEUMATIQUE.
2	TABLES DENSIMETRIQUES DE 45 CANAUX AVEC MOTEURS D'ENTRAINEMENT.
1	SEPARATEUR DE BALLES AVEC TAMIS MONTE A LA PARTIE SUPERIEUR, CAPACITE 3 T/H.
1	TRIEUR ALVEOLAIRE 600 X 2,000.
3	COMPRESSEURS.
1	MOTEUR ELECTRIQUE D'ENTRAINEMENT TARARE.
3	MOTEURS ELECTRIQUES D'ENTRAINEMENT SEPARATEUR CIRCUIT PNEUMATIQUE.
4	SEPARATEURS DE POUSSIERE CENTRIFUGE.
2	MANTEAUX DE RECHANGE POUR TRIEUR 600 X 2,000.
3	MOTEURS ELECTRIQUES D'ENTRAINEMENT CONE A BLANCHIR DE 1,000.
4	CYLINDRES CALIBREULS TRIEURS POUR CALIBRAGE DE GRAINS DE PADDY DE DE CAPACITE 3 TONNES PADDY HEURES.
3	TREMIS DE RECEPTION METALLIQUES MOBILES.
3	EXTRACTEURS DE TREMIS.
6	ELEVATEURS X + MOTORREDUCTEURS.
3	EMOTTEURS EPURATEURS AVEC ASPIRATION SUR CONDUITS.
	REMORQUES VRAC.
	BOISSEAUX.
	CHARRENTES.
	EQUIPEMENTS ELECTRIQUES.

Rice Prices in Antananarivo (ordinary grade)
Retail

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-----1988-----												
1988	436	430	413	420	429	414	408	412	418	445	469	0
1987	506	475	401	346	297	288	327	323	333	382	399	421
1986	-	-	-	-	-	-	-	418	524	531	527	516

Rice Prices in Toamasina (ordinary grade)
Retail

1988	370	404	438	397	405	346	348	353	366	427	453	0
1987	537	508	470	389	331	305	339	334	376	408	403	440

MADAGASCAR RICE EXPORT PROSPECTS

DELUXE RICE IN MADAGACAR

Until the early 1970's Madagascar produced important quantities of high quality deluxe rice, primarily for export markets. Extremely strict standards were set that provided price incentives to encourage homogeneity and varietal purity of paddy marketed. Hirsch reports that price premia of about 10% during the 1960's were cut to 5-6% by the mid-1980's. (Standards specified in decret No. 61.548 of 12 Oct. 1961 - reproduced in Hirsch, 1986 Annexe 3 Section D).

Lac Alaotra and Fifabe were the primary zones producing deluxe rice for export during the 1960's, but that the importance of deluxe rice has fallen from more than 60 percent of production to less than 5 % of paddy marketed in 1985. Traditional deluxe rice varieties are Ali-Combo, Vary-Lava and Makalioka. SOMALAC reported that only 2.7% of the paddy collected by the end of July, 1985 could meet the standards for "deluxe" rice.

Price policy has played an important role in the shift in production, with prices for locally milled rice set at the same level as for 100% broken imports. Also, low cost rice mills are reported to produce a lower quality rice than industrial mills, leading to reduced incentives for attention to quality among the latter.

While Madagascar has not imposed levies or taxes on rice imports, there have apparently been such levies on exports (check), as well as EC variable levies on imports (IRRI, World Rice Statistics).

WORLD RICE SITUATION AND OUTLOOK

The 1987/88 rice marketing year has seen major price increases resulting from a poor 1987 Asian monsoon that affected both the Thai crop and import requirements in other Asian countries. Current USDA estimates are for higher prices to encourage production increases during 1988, leading to a near record world rice crop of nearly 320 mmt on a milled basis, despite a smaller crop in China. For 1988/89, this is expected to reduce prices, increasing demand among rice importers, especially in light of higher wheat prices. Current forecasts are for rice trade to rebound to 12.4 mmt, up 1.2 mmt from the current forecast for 1988. Demand will strengthen, but larger supplies will contribute to an increasingly competitive international market.

On a milled rice basis, world rice production and trade have about doubled since 1960, if the 1987/88 crop year is ignored. 1987/88 rice production fell 13.7 mmt on a milled basis, leading to a 1.5 mmt reduction in forecast exports. In other words, a 4.5 percent decrease in production is expected to lead to a 11.8 percent decrease in exports, according to USDA forecasts. The reduction in exports was initially expected to be much larger, but exports and consumption have been maintained by reducing stocks to their lowest level since 1976/77.

WORLD RICE TRADE

Rice trade makes up a much smaller share of total world rice production than does trade in wheat, the other primary foodgrain. Since 1960, the share of rice production traded has ranged between 3.2 percent and 4.9 percent, with 1987/88 exports expected to account for only 3.4 percent of production on a milled basis, down from about 4 percent in 1986/87. In contrast, on average about 20 percent of world wheat production is traded. Rice market volatility is in part a function of the geographic concentration of a large portion of the production and its sensitivity to the Asian monsoon.

For Madagascar, the world rice market must be examined from several perspectives. As a producer and importer of long grain rice, the general evolution of the world market in commodity rice is of interest. Imports have been largely of the 100 percent broken variety, but local production quality is such that Grade B Thai market is also of interest. As a potential exporter, the specialty market for luxury grades are of interest, but the market for standard long grain rice should also be evaluated along with data on Malagache production costs under various farming systems.

An understanding of the world rice market must begin with an understanding of rice itself. Most traded rice can be categorized as either Indica, tropical, long grain varieties, or Japonica, temperate zone, shorter grained varieties. In the United States, rice is categorized as long, medium or short grain on the basis of average length and the ratio of average length to width. Long grain rice typically cooks so that grains remain separated, while shorter grain varieties tend to stick together.

In addition, there are several other types of rice: Javonica, or bulu, rice varieties are produced in some parts of Indonesia and the Philippines; Glutinous rice, which forms a gelatin-like mass when cooked is a staple in northeast Thailand and Laos, and produced in small quantities throughout Asia; and Aromatic varieties of scented rice, such as Basmati, are produced primarily in Pakistan and India, with small production in Thailand (Rastegari).

The market for aromatic rices has been primarily the higher income countries of the Middle East, Hong Kong and Singapore. However, as with other specialty products, the development of a market is very different from the development of exports of a general commodity, such as long grain rice. Even the market for long grain rice is considerably less standardized than markets for other cereal grains. Thus, in considering options for the development of a strategy for Madagascar in the world rice market, options that include both commodity and specialty trade should be evaluated.

EXPORTERS AND IMPORTERS

World rice exports are dominated by a relatively limited number of exporters. Thailand, The U.S. Pakistan, China and the European Community of 12 (EC-12) accounted for 79 percent of total rice exports in 1987. (see table) On the importing side, the EC-12 and Iran were the only importers of more than 1 million mt in 1987. The EC has been the single large and consistent importer over time, but its imports are trending slowly downward.

Recent policy decisions that will encourage long grain rice production can be expected to accelerate this trend. A variety of Asian, Middle Eastern and African nations are also important rice importers, with the types of rice imported a function of both tastes and ability to pay or receive concessional terms. (see tables on importers and U.S. concessional programs, and major traders by type of rice).

In the market for specialty rice, there has been significant improvement in the quality of rice available to Madagascar's old export clients in Europe. In addition, recent changes in the European Communities Common Agricultural Policy increase incentives to produce more high quality long grain rice.

At the same time evolution of the food distribution system in Europe will have an impact on the way that Madagascar might go about redeveloping a market for specialty rice.

Much of the world's rice is state traded. Nonetheless, a large number of brokerage houses in the U.S. Europe, Hong Kong and Singapore are also involved. Siamwalla and Haykin report that margins of 5 -10 percent are not unusual in the rice trade, although they would be unthinkable in trade in other grains. For specialty trade, higher margins can be expected.

While f.o.b. Bangkok Board of Trade prices have traditionally been reported in discussions of rice trade, they have not had the same significance as central market prices for more standardized commodities do. For instance, the Chicago Board of Trade futures for corn, wheat and soybeans. This is in part due to the fact that rice grades are less standardized than other cereals grades, putting new exporters or sporadic exporters at a disadvantage when the trade offers a severe price discount to offset quality uncertainty. On the other hand, exporters with a reputation for high quality are able to command import premia for their rice on world markets. For example, high quality long grain exports from the U.S. have commanded a premium on the European market of \$30 per ton to as much as \$200 per ton over the last several years.

Madagascar was a net rice exporter until 1970, with exports of 69,000 mt in 1967 and began relatively important imports in 1972. While a small level of exports continued through the 1970's, imports grew rapidly, reaching a peak of 366,000 mt in 1982.

Some observers have indicated that reducing domestic assembly and transformation costs are the key to developing Malagache rice exports. Cross country comparisons of margins and prices are complicated by the importance of government intervention in the agriculture of many important rice traders. Nonetheless, some comparisons can be useful. Razzas, Rabenarivo and Meserve report that the farmer's share of retail prices in Madagascar on a milled equivalent basis have fluctuated between 40 percent in 1984 and 65 percent in 1988. While not strictly comparable, data for long grain rice in the U.S. indicated that the farm share of the fob mill price, bagged ranged from 50 - 75 percent during 1984-86. As the Madagascar data are based on observations slightly further along the marketing channel, a smaller share would be expected. Observations of the farmer share of the export price in Thailand over 1970-82 show that farmers gained a gradually increasing share of the final price (see figure). During this period,

Thailand is reported to have made major progress in marketing system improvements. The data imply that some of the benefits reached the farmers.

CONCLUSIONS

Whether Madagascar can compete in world markets for standard grades of long grain rice over the medium to longer term will be a function of quality and price. This brief overview does not permit a detailed analysis of the costs and potential of efficiency gains to make Madagascar competitive. Several conclusions can be drawn, however:

o Production and competition in world rice markets have increased markedly since Madagascar was a rice exporter. It will not be possible to simply pick up where exports started to disappear. Costs and quality, as well as ability to assure supplies will be critical regardless of whether the standard commodity or specialty market is pursued.

o If the European market is to be targeted, recent policy developments to encourage long grain rice production, as well as developments in Thailand and the United States must be considered. Detailed production, processing and transportation cost data will be required for further analysis of competitiveness.

o For rice as a commodity, markets that are closer to Madagascar than Europe should be explored.

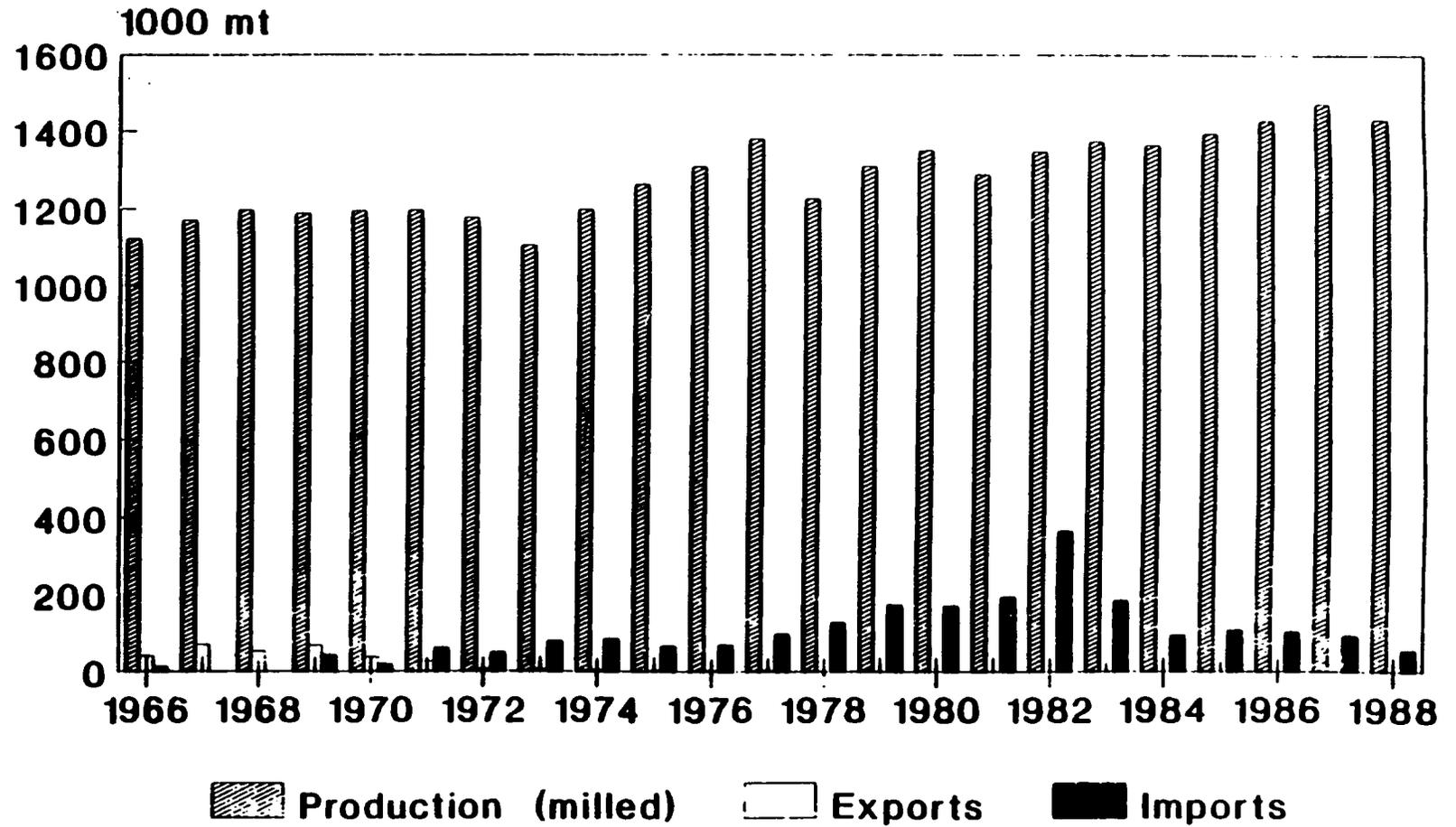
o For specialty rice, developments in European food distribution systems over the last decade will have important implications for the way that specialty rice could be sold. For example, the French food distribution system has seen important concentration in ownership, and the developments of chains capable of purchasing large quantities, but requiring assured supplies and attention to packaging, and quality, as well as price.

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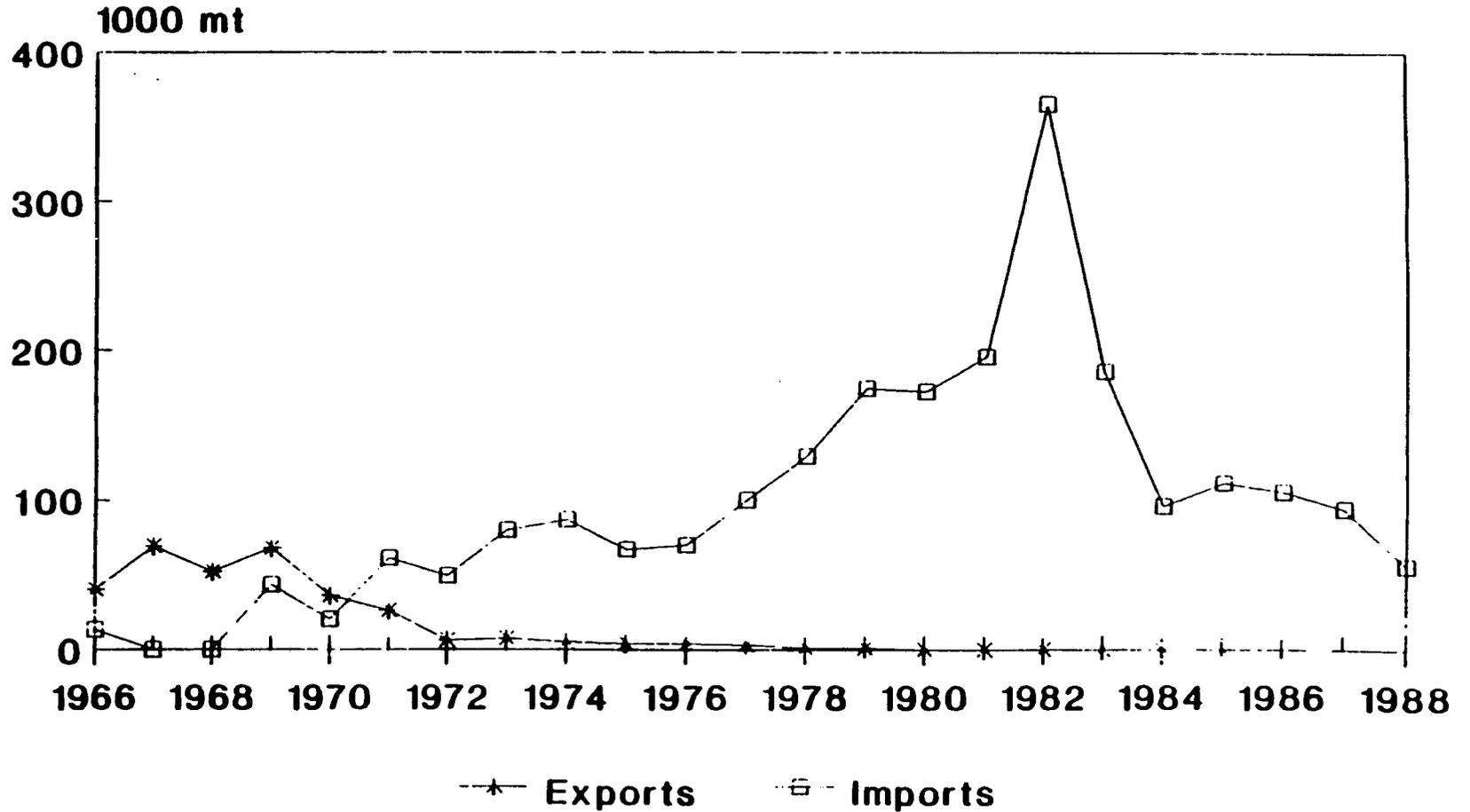
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Madagascar Rice

Production, Imports and Exports



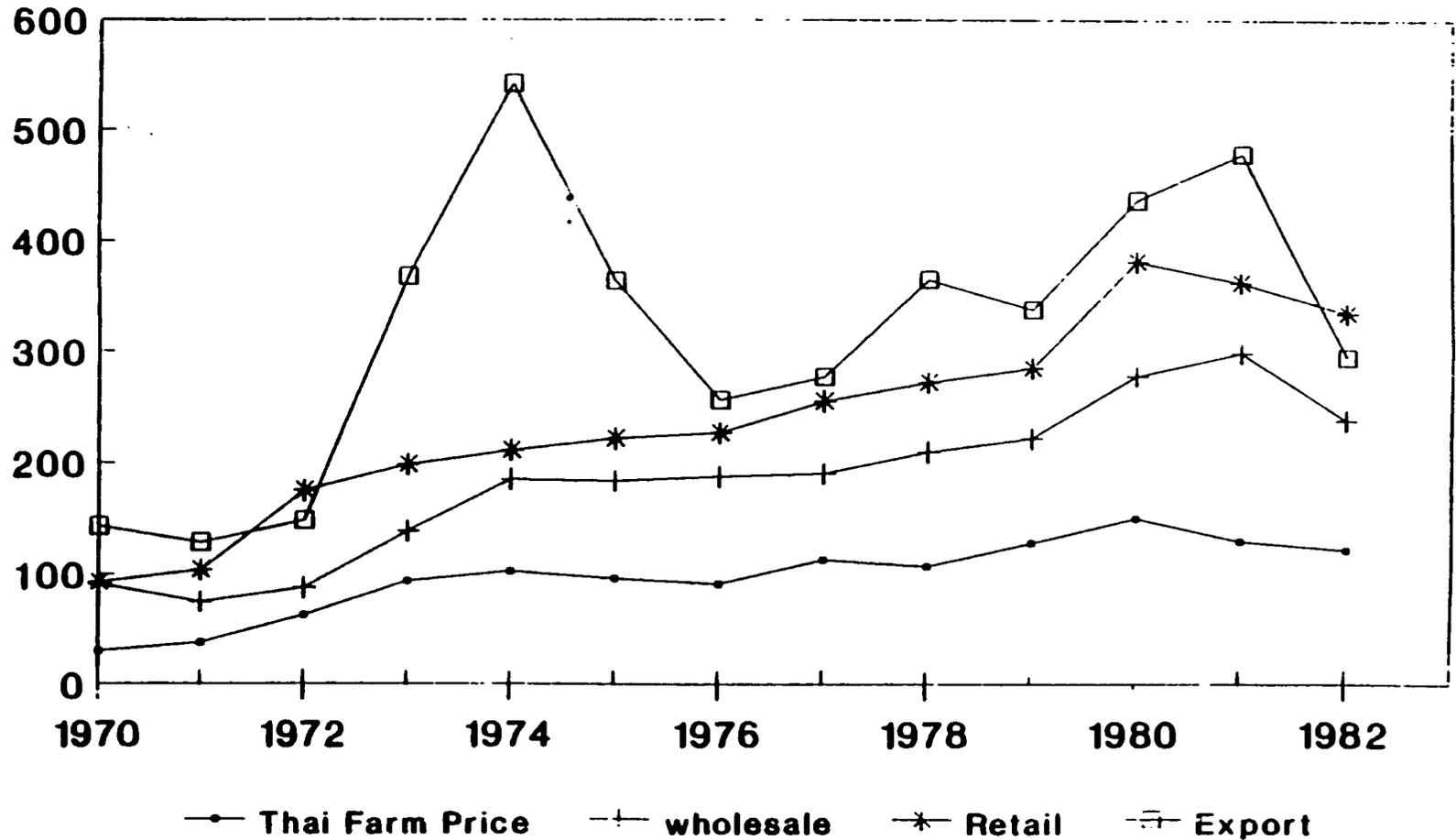
Madagascar Rice Imports and Exports



Abt Associates Chart

Thai Rice Prices

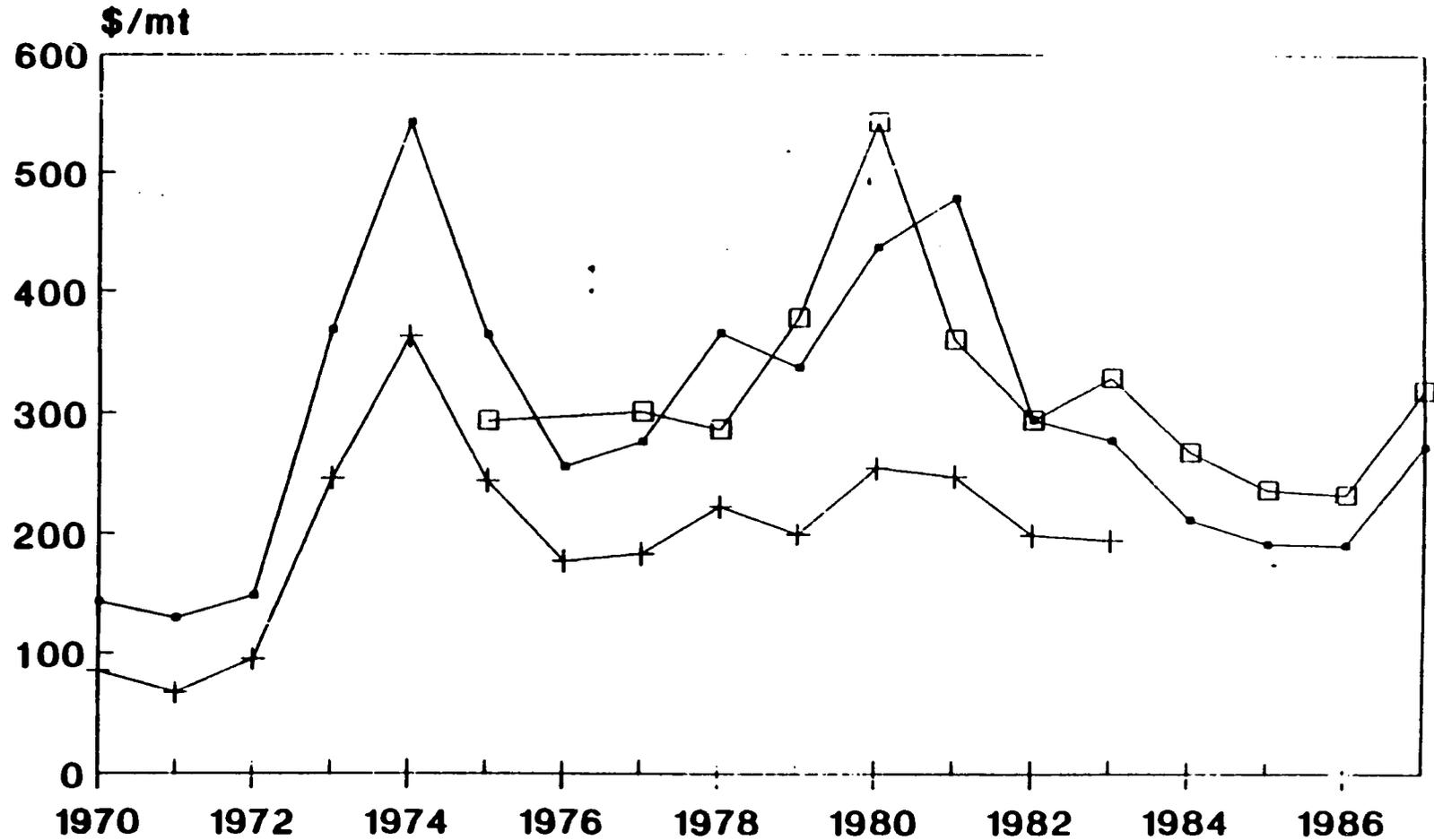
Farm, Wholesale, Retail and Export



Prices \$ per MT, Farm = rough, others
Milled equivalent basis

Abt Associates Chart

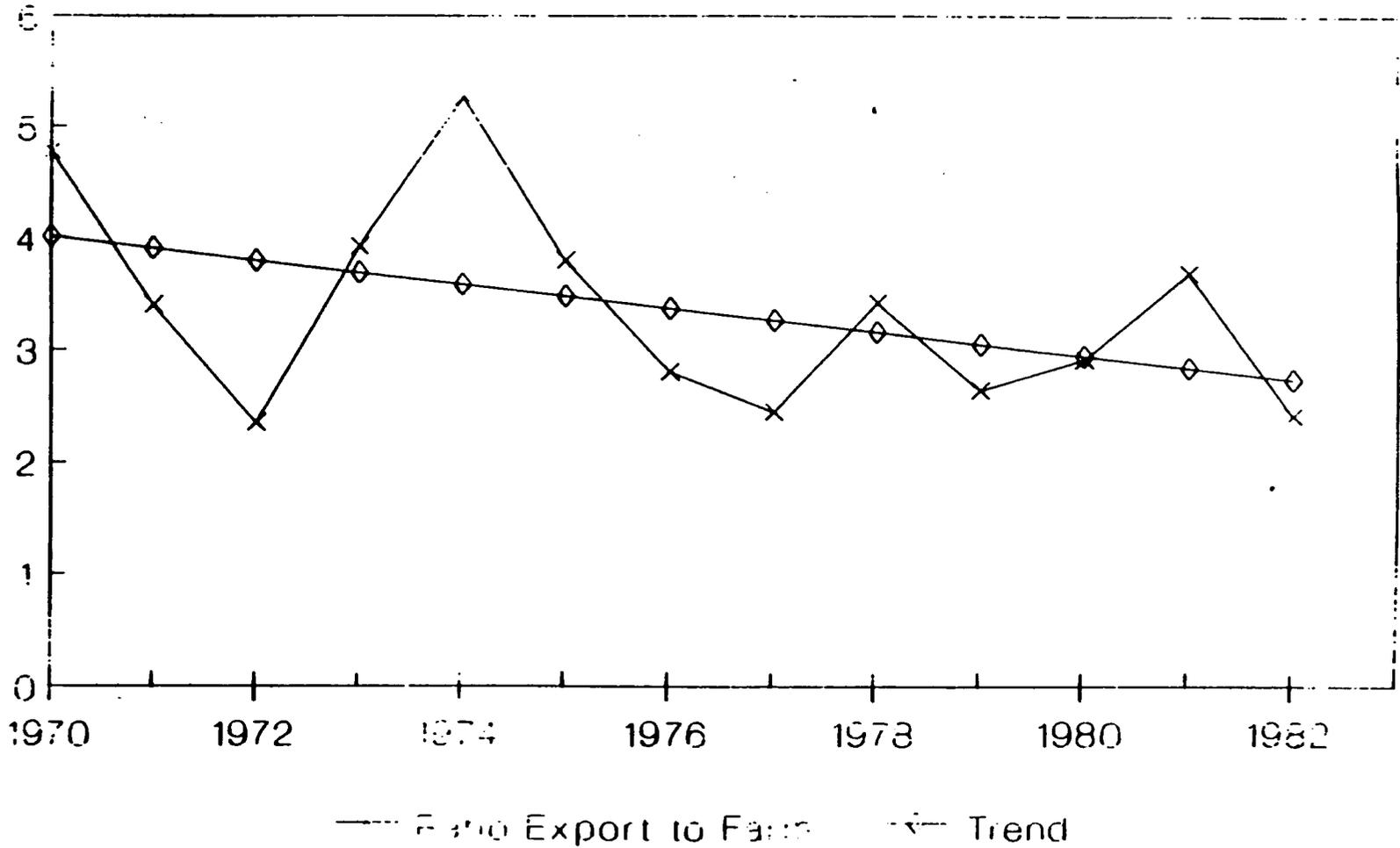
Commercial Rice Export/ Import Prices



—●— Thai Grade B —+— Thai 100% Broken —□— cif Rotterdam
 Thai Grade B, fob Bangkok; Thai A1 Super
 Thai Grade B, cif Rotterdam

Abt Associates Chart

Thai Rice Prices Ratio of Export to Farm Price



Prices in \$ per MT. Prices in US\$
*from price in曼谷, Export in market
 of rice in曼谷, paid*

Abt Associates Chart

EIC
Operating Statements
 1983 - 1988
 (FMG million)

	1983	1984	1985	1986*	1987	1988	1989**
Initial stock	3000.1	4972.7	1720.1	1720.1	556.6	3876.1	754.8
less depreciation	-83.7	0.0	0.0	0.0	0.0	0.0	0
Purchases	5294.0	5461.6	7011.1	7057.7	6567.8	2758.7	3304.6
Personnel	156.8	248.8	260.6	355.0	343.6	474.0	356.8
Duties & taxes	0.0	0.8	1.0	1.6	40.8	1.5	29.8
External services	284.0	684.7	574.4	776.0	418.0	211.3	431.5
Transport	341.6	1158.5	513.9	536.7	72.1	234.4	0
Other Gen. & Admin.	14.6	17.3	22.4	27.3	47.2	38.9	n/a
Finance charges	928.6	1006.8	464.3	494.6	829.5	1138.7	n/a
Depreciation	16.4	31.0	40.4	96.1	236.8	249.4	n/a
Bad debt provision	78.6	5.0	123.9	302.3	0.0	109.4	n/a
SOMALAC fee	154.3	95.8	0.0	228.2	0.0	n/a	n/a
Total	10185.3	13683.0	10732.1	11595.6	9112.4	9092.4	4877.5
Ending stock	5095.7	1720.1	2205.8	556.6	3876.1	754.8	312.7
less depreciation	-123.0	0.0	0.0	0.0	0.0	0.0	0
Sales	5057.1	11660.1	9255.7	11430.8	1627.2	9409.6	4610.6
Other sales & services	10.1	518.5	28.1	59.5	32.4	6.9	5.5
Interest & dividends	2.0	15.0	3.1	5.4	6.0	10.0	0.1
Total	10041.9	13913.7	11492.7	12052.3	5541.7	10181.3	4928.9
NET BENEFIT	-143.4	230.7	760.6	456.7	-3570.7	1088.9	51.4

**Source: 1983-85 taken from Table 18, RIP mid-term report
 of MPARA, Direction de la Gestion et du Personnel;
 1986 -88 taken from EIC report, May, 1988**

* 1985 plus Jan. - Apr. 1986

** 11/30/88 plus projections to 4/30/89

EIC
INCOME STATEMENTS

ANNEX 6
Table 2

	1984/85	1985/86	1986/87	1987/88
	----- (FMS Million) -----			
Sales	9,255.7	11,430.8	1,627.2	9,409.6
Cost of sales:				
Purchases	7,011.1	7,057.7	6,567.8	2,758.7
Beg. invent.	1,720.1	1,720.1	556.6	3,876.1
End invent.	(2,205.8)	(556.6)	(3,876.1)	(754.8)
	6,525.4	8,221.2	3,248.3	5,880.0
Gross Profit	2,730.3	3,209.6	(1,621.1)	3,529.6
Operating Expenses:				
Personnel	260.6	355.0	343.6	474.0
Ext. services	574.4	776.0	418.0	211.3
Transport	513.9	536.7	72.1	234.4
Depreciation	40.4	96.1	236.8	249.4
Bad debt provision	123.9	302.3	0.0	109.4
Subtotal	1,513.2	2,066.1	1,070.5	1,278.5
Inc/(loss) from oper.	1,217.1	1,143.5	(2,691.6)	2,251.1
Int. & div. income	3.1	5.4	6.0	10.0
Other revenues & grains	28.1	59.5	32.4	6.9
Subtotal	1,248.3	1,208.4	(2,653.2)	2,268.0
Other Expenses:				
Duties and taxes	1.0	1.6	40.8	1.5
Other G&A	22.4	27.3	47.2	38.9
Finance charges	464.3	494.6	829.5	1,138.7
Somalac fee	0.0	228.2	0.0	0.0
Subtotal	487.7	751.7	917.5	1,179.1
NET INCOME/(LOSS)	760.6	456.7	(3,570.7)	1,088.9

1985 - 1988
(FMC Million)

	4/30/86	4/30/87	4/30/88
ASSETS			
Establishment	0.0	0.0	0.0
Fixed (Subsidized)			
Buildings	0.0	0.0	0.0
Equip/Materials	35.0	101.7	96.1
Transport Equip	12.4	31.5	16.9
Office Equip.	0.0	0.0	0.0
Other	0.0	0.0	0.0
Sub-Total	47.4	133.2	113.0
Fixed (Own Funds)			
Land	11.8	11.8	11.8
Buildings	10.1	19.2	17.5
Equip/Materials	70.1	117.0	130.1
Transport Equip	60.7	560.4	397.4
Office Equip.	7.6	5.7	3.9
Housing/Furn	0.9	4.5	3.3
Other	0.0	0.0	0.0
Const. in Prog.	0.0	0.6	0.9
Sub-Total	161.2	719.2	564.9
Total Fixed Assets	208.6	852.4	677.9
Current Assets			
Paddy	53.6	2592.2	0.0
Products	0.2	644.4	60.4
Pack. Mat'ls	296.2	311.5	184.7
Spares	194.8	292.1	334.2
Fuel	11.7	17.6	25.3
Other Supplies	0.0	18.3	5.3
Sub-Total	556.5	3876.1	609.9
Accounts Rec.			
-Suppliers	28.5	19.2	35.2
-Clients (reg)	152.7	185.3	324.4
- " (Doubtful)	271.6	278.3	392.4
-Provisions	-267.5	-274.9	-392.4
-SLAC Pers'l	1.9	5.3	13.8
-Other (reg)	64.8	211.8	282.2
- " (Doubtful)	229.0	229.6	330.0
-Other Prov'ns	-229.0	-229.6	-316.8
Sub-Total	252.0	425.0	668.8
Cash & Bank	1139.8	79.2	1051.8
Total Current	1948.3	4380.3	2330.5
TOTAL ASSETS	2156.9	5232.7	3008.4

	4/30/86	4/30/87	4/30/88
EQUITY			
Shares	0.0	0.0	0.0
Grants	1050.7	1111.7	1117.9
Retained Earnings	94.7	1902.7	-1612.7
Total Capital	1145.4	3014.4	-494.8
SUBVENTIONS			
Stock	179.7	297.7	297.7
Fixed Assets	25.9	73.2	82.6
Written Off	-99.9	-181.3	-222.5
Net Subsidies	105.7	189.6	157.8
LONGTERM LIABILITIES	0.0	0.0	2000.0
OWED TO SLAC/DIV'NS	-1248.8	-1461.3	-1802.6
SHORTTERM LIABILITIES			
Suppliers	62.2	57.5	40.4
Customers	33.4	3.0	0.0
SLAC Personnel	1.3	1.4	0.0
Government	330.9	318.2	244.9
Social Security	0.0	0.2	0.7
Other	102.6	750.9	458.8
BTM	6.5	5954.4	1000.0
Other Banks	0.0	61.1	498.0
Transfers	0.3	0.0	1.6
Total Short-Term	537.2	7146.7	2244.4
CURRENT OP'G RESULTS	1579.8	-3656.7	905.4
TOTAL CAPITAL & LIAB	2483.1	12289.2	245.0
Discrepancies			
TOTAL CAPITAL & LIAB	2119.3	5232.7	3009.9
TOTAL ASSETS	2156.9	5232.7	3008.4
Discrepancy	-37.6	0.0	1.5

EIC - Schedule of Gross Fixed Assets

	1985	1986	1987	1988
	----- (FMG Million) -----			-----
Subventionnes"				
Mat. and Outil.		47.3	108.3	114.5
Mat. Transp.		25.9	73.2	82.0
Total	0.0	73.2	181.5	196.5
Increase			108.3	15.0
Fonds Propres"				
	0.0	536.8	1,294.1	1,367.6
Increase	0.0	0.0	757.3	73.5

EIC - Schedule of Acc. Dep't. & Dep'n. Exp.

	1985	1986	1987	1988
	----- (FMG Million) -----			-----
Subventionnes"				
Acc. Dep. Mat. and Outil.	0.0	8.6	6.6	18.4
Acc. Dep. Mat. Transp.	0.0	13.5	41.7	65.1
Total	0.0	22.1	48.3	83.5
Dep. Exp.	0.0	0.0	26.2	35.2
Fonds Propres"				
Total Acc. Dept.	0.0	375.8	588.2	803.5
Dep. Exp.	0.0	0.0	212.4	215.3
Total Dep. Exp.	0.0	0.0	238.6	250.5

EIC - Subvention d'Equipement - Stock

(1)

	1985	1986	1987	1988
	----- (FMG Million) -----			
Beginning balance	0.0	179.7	92.8	159.1
Increase	0.0	0.0	204.9	138.6
Decrease	0.0	86.9	138.6	156.4
Closing balance	0.0	92.8	159.1	141.3

EIC - Subvention d'Equipement - Immobilizations

(1)

	1985	1986	1987	1988
	----- (FMG Million) -----			
Beginning balance	0.0	25.9	12.4	30.6
Increase	0.0	0.0	60.8	51.4
Decrease	0.0	13.5	42.6	66.1
Closing balance	0.0	12.4	30.6	15.9
Total Closing (stock & immob.)	0.0	105.2	189.7	157.2

1985 statements not available.

1/ Calculated based on the ending balance indicated in the balance sheet.

EIC - Fonds de Dotation

	1985	1986	1987	1988
	----- (FMG Million) -----			-----
Beginning balance	0.0	1,050.7	1,050.7	1,111.7
Increase	0.0	0.0	61.0	6.2 (1)
Decrease	0.0	0.0	0.0	0.0 (1)
Closing balance	0.0	1,050.7	1,111.7	1,117.9

1985 statements not available.

1/ Calculated based on the ending balance indicated
in the balance sheet.