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Do Telecommunications and Air/Sea Transport Problems Limit Madagascar's Exports?

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PREFACE

This brief study was initially conceived as part of an unsolicited proposal to the U.S. Agency for International Development (USAID) for a set of case studies on the effect of regulation on the private sector in Ghana, Madagascar and Tanzania. When the full set did not receive approval from AID/Washington, the scope and focus of this component was reduced. USAID Madagascar provided funding for it under a purchase order in December 1992.

The study was conducted by Charles Steedman, Acting Director of the University of Michigan's Center for Research on Economic Development, in close collaboration with Dr. Rajaona Andriamananjara, Director General of the *Institut Malgache des Techniques de Planification* (IMaTeP), and three of the Institute's staff members:

Alexis Rabenizafy, jurist,
Jean-Paul Ramanantsoa, economist, and
Jacques Hébert Zily, planner.

The team conducted interviews in Antananarivo and Toamasina from December 8 to 16, 1992. Appendix A contains a list of the persons interviewed.

Graciously and openly received by all of the individuals listed, the team would like to express its gratitude to them all for their kind willingness to discuss, often at considerable length, the subject matter of this report.

"In other words, the commercial success of any export-oriented industry in a developing country depends more and more on its ability to tie effectively into the emerging international trade logistics service networks."[1]

"With the growing volume of container trades and greater demand for speed and tight scheduling, it has become increasingly necessary for the road, rail and water transport systems to be physically and operationally linked."

"In many instances, developing country ports have lost out because of their costly and unreliable service, and because of inadequate links with inland distribution systems."

"Assessments should be made of existing institutional, regulatory, and procedural impediments to trade development."

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[1]Quotations are from Hans J. Peters, *Seatrade, Logistics, and Transport.* Policy and Research Series, no. 6. Washington DC: The World Bank, 1989.

ACRONYMS

ADEMA	Aéroports de Madagascar (société d'exploitation des 12 aéroports principaux)
ASECNA	Agence de Sécurité de la Navigation Aérienne en Afrique et à Madagascar (Organisme Technique Multilatéral pour les Pays d'Afrique Francophones)
AUXIMAD	Société Auxiliaire Maritime de Madagascar
CAPIE	Crédit d'Ajustement pour la Promotion de l'Industrie et des Exportations (Banque Mondiale)
CGM	Compagnie Générale Maritime
CIMACOREM	Conférence Internationale Madagascar Comores Réunion Maurice
CMN	Compagnie Malgache de Navigation (société de transports maritimes)
DAL	Deutshe Afrika Linie (société de transports maritimes)
FCR	France Câble et Radio
FIV.MPA.MA.	Groupement des Opérateurs Privés Malagasy
FMG	Malagasy francs
GELM	Groupement des Exportateurs de Letchis de Madagascar
MINAGRI	Ministère de l'Agriculture
MINEP	Ministère de l'Economie et du Plan
MPT	Ministère des Postes et Télécommunications
MSC	Mediterranean Shipping Company
MSL	Malagasy Shipping Line (cabotage)
MTMT	Ministère des Transports, de la Météorologie et du Tourisme
NCHP	Navale et Commerciale Havraise Péninsulaire (société de transports maritimes)

PAS	Programme d'Ajustement Structurel
SCAC	Société Commerciale d'Affrètement et de Combustible
SCTT	Société Commerciale de Transports Transatlantiques
SDV	SCAC - Delmas Vieljeux
SEAL	Scandinavian East Africa Line
SEPT	Société d'Exploitation du Port de Toamasina
SGS	Société Générale de Surveillance
SNC	Société Navale Caennaise (société de transports maritimes)
SMC	Société Malgache de Cabotage
SMGI	Société Minière de la Grande Ile (cabotage)
SMTM	Société Nationale Malgache de Transports Maritimes
SOLIMA	Solitany Malagasy (compagnie pétrolière)
SOMACRAM	Société Malgache de Courtage, de Représentation et d'Affrêtements Maritimes
STIMAD	Société des Télécommunications Internationales de Madagascar
TAM	Travaux Aériens de Madagascar
TEU	Twenty-foot equivalent unit

SUMMARY

This study had its origins in the notion that Madagascar's ability to expand and diversify its exports was significantly hampered by three conditions:

- high sea freight rates as a result of oligopolistic practices by a shipping conference;
- Air Madagascar's monopoly on air traffic rights; and
- an obsolete and often non-functional national telecommunications system.

To what extent is the perception correct? For two weeks we asked this question in interviews of manufacturers, shipping agents, airline executives, ship operators, port authorities and government officials. Two weeks are clearly insufficient for a detailed study of both the transportation sector and the telecommunications system. The period may be adequate, however, for the purpose of determining the basic validity of the perceptions which prompted this study.

The following, somewhat general statements reflect our conclusions. The rest of the report provides supporting detail.

Sea Transportation

Sea freight shipments from Madagascar to European and other ports are *not* constrained by high rates or by the existence of the Capricorn Conference.

-- The Capricorn Conference did in fact exercise control over as much as 85 percent of Madagascar's scheduled ocean freight tonnage in 1984. Since then the Conference's share has fallen to about 49 percent and freight rates are markedly lower. This development can be traced in large part to competition from an "outside" line, the Mediterranean Shipping Company, which has its headquarters in Geneva.

The problems which do hinder export performance by sea are not found in ocean transport *per se*. They are in fact located upstream from the port of

Toamasina (Tamatave), where conference and non-conference ships take on the bulk of Madagascar's export cargo.

-- The difficulties encountered in shipping to Toamasina or to secondary ports by road or rail from production zones in Madagascar are well known and are not examined in this report.

-- The movement of export cargo by sea from secondary ports to Toamasina (or to another regional port such as St. Denis, Réunion) -- known as *cabotage* -- has become slightly more efficient recently but should be improved much more.

-- The major bottleneck occurs at the point of intermodal transfer from one means of transportation (road, rail, coastal ship) to an ocean-going vessel. It is here that inefficiencies and deliberate delays occur, adding to costs and preventing Madagascar from having the benefit of lower sea freight rates as a result.

-- The intermodal transfer bottleneck affects exports indirectly to the extent that imported intermediate goods and inputs used in the production of exportables are delayed enroute to their final destination and thus rendered more expensive.

-- This problem may be attributable in large part to the comportment of the Customs Service, which is thought to be unwilling to change its operating procedures so as to facilitate intermodal containerized shipments. For example, the Service continues to work normal hours at the port of Toamasina, which operates around the clock. Customs agents are available at other times but charge higher rates for their services. Customs is also said to insist on its right to open and inspect containers before they are loaded on a vessel at Toamasina even though they have been inspected and sealed by the Service in Antananarivo.

Cabotage has been legally limited to vessels flying the Malagasy flag. The national carrier (CMN), however, does not have the kind of ships that lend themselves to expanded activity. Open competition, on the other hand, could lead to greater reliance on smaller, more maneuverable ships that are less costly to operate. This could lead in turn to a necessary expansion of coastal trade. It could provide an impetus to export activity in isolated regions sooner than might occur from improvements to road or rail links.

-- In fact, foreign ships have recently been allowed to engage in *cabotage*. In addition, the appearance of competing conference and non-conference "feeder" ships at ports like Mahajanga and Nosy Be has led to improved container handling in some of them. What now appears to be a *de facto* liberalization should be legalized and actively encouraged.

Potential markets for Malagasy goods in South America (shipped via the Cape of Good Hope), in East and Southern Africa, in South and Southeastern Asia remain virtually unexplored. Whereas trade flows in the past have tended to be north-south, they may well become increasingly east-west.

-- The shipping companies that serve Madagascar (MSC, members of the Capricorn Conference) sail north-south rather than east-west in this region. The national shipping company, SMTM, now without ships of its own, failed at an attempt to establish sea links with Southeast Asia.

-- Lack of telecommunications and air links with potential markets to the east and west, discussed below, only enhances Madagascar's isolation and delays the time when new markets can be opened up.

Air Transport

Air Madagascar's total monopoly on air transport has been broken to the extent that domestic cargo operations and passenger flights in aircraft with a maximum of nine seats have been opened to competition.

-- However, regulations (an *arrêté*) to implement the liberalization of domestic cargo operations have not yet been promulgated, even though they have existed in draft form since 1990.

-- The Presidential Decree[2] which liberalized domestic passenger flights in aircraft with a maximum of nine seats stipulated that flights in aircraft with more than nine seats would be reserved for Air Madagascar during a transition period of no more than two years from the date of publication (24 June 1991).

Air Madagascar's monopoly on international traffic rights was reaffirmed in May 1991. A second Presidential Decree[3] approved an accord (*convention*) between the Ministry of Transportation (MTMT) and Air Madagascar. The accord stipulated that as long as the State holds more than 51 percent of Air Madagascar's shares, the company is the sole designee of the Government for international traffic rights. The Decree also abrogated any article of the 1961 Decree conferring a monopoly on Air Madagascar which conflicted with the new one.

-- The new Decree may have been worded in this fashion to give the appearance of some softening of stance on Air Madagascar's international traffic rights, but in fact, unless and until the airline is privatized, the international monopoly remains reaffirmed.

The Government states that Air Madagascar will eventually be privatized, but for the time being the decision has been made to keep it as a public enterprise.

-- Some observers believe that Air Madagascar and the Government are being overprotective of their own air traffic rights. Madagascar could benefit immediately if outside carriers, both scheduled and charter, were allowed access to the market. Loosening air traffic restrictions is of more urgent concern than Air Madagascar's eventual privatisation.

- To justify air shipment, export commodities should be of high value. In Madagascar's case, the number of such products is relatively limited. It

[2]No. 91-253 of 7 May 1991, published in the *Journal Officiel* of 24 June 1991.

[3]No. 91-275 of 23 May 1991, published in the *Journal Officiel* of 24 June 1991.

does not extend much beyond vanilla, shellfish (lobster, shrimp, crab), litchis and precious or semi-precious stones. For other products which might have a market in Europe, such as fruits and vegetables, Madagascar's greater distance from the market makes it almost impossible to compete with countries such as Kenya.

-- Air Madagascar's cargo capacity on international routes is limited. The Boeing 747 Combi put in service in 1979 can carry up to 160 metric tons of cargo (per week) in its four weekly flights to Europe. Boeing 737 flights to Johannesburg and Nairobi can carry at most two more tons per week. In fact, for about ten months of the year even the limited capacity of the Boeing 747 is far from fully used.[4]

-- There is no evidence of price elasticity of demand for cargo space on international routes. Air Madagascar reduced its freight rates by 30 percent in 1987 to promote exports but demand for space remained unchanged.

-- Air Madagascar has no refrigeration capacity, neither refrigerated containers for aircraft and nor cold storage facilities on the ground. Air shipments of frozen shellfish are therefore limited to regional markets such as Réunion. Frozen shellfish shipped from the west coast packed in ice, then deep frozen at an installation about one mile from the Ivato airport, can be airlifted to regional markets before they thaw.

Telecommunications

- Telecommunications are characterized by exporters, agents and shipping company executives as "a crucial problem," "an enormous handicap," or "a gigantic blocking factor, total and complete." One of them said that his company loses a great deal of money because of the inadequacy of the existing system. A second complained that he was unable to call his factory 25 km away. A third, when interviewed, was intensely frustrated by the fact

[4]With the exception of the litchi period, only 35% to 40% of this capacity appears to be used.

that he had unsuccessfully been trying to call Toamasina all morning to discuss a cargo manifest transmitted to, but received garbled in, Mauritius.

-- The most serious inadequacy is the linkage between the capital and the principal port. Companies with offices in both places send messages, computer diskettes and documents back and forth by overnight bush taxi. The system is highly reliable but causes delays of up to 24 hours. Courier service to other cities in Madagascar and to clients overseas is more reliable than telecommunications.

-- Ship arrival information is crucial to exporters, importers and shipping agents but is haphazardly received at company headquarters in Antananarivo or Antsirabe via conventional means. Almost everyone now uses single-sideband (known as BLU in French) radios to communicate urgently with ships at sea and with offices in Toamasina.

- Well aware of the dilapidated and inadequate nature of the current system, which included only 33,800 lines for the entire country in 1991, the Malagasy Government and major donors have embarked on a major five-year investment program. Partial financing is available from France, the World Bank and Japan. The entire telecommunications system will be modernized, restructured and almost fully privatized.

-- After creating a corporate entity to provide basic domestic and international communications services, the State will divest itself of majority ownership, retaining 34% of the shares in the new company initially and reducing its stake gradually thereafter.

-- Top priority has been given to the installation of a digital POTS environment connecting Antananarivo, Toamasina and Antsirabe. The new, expanded system, which would assure callers of a connection every time, is to become operational by mid-1994.

-- Japanese funding has been obtained to rehabilitate the existing but unreliable microwave network linking Antananarivo with the provinces.

-- The Malagasy government also wants to expand the domestic satellite system (DOMSAT) from three to twelve ground stations, so as to include all provincial capitals and enclaves with potential for tourism or other types of development.

-- Over $100 million in funding remains to be raised from donors and from the private consortium that becomes the successful bidder for 34% of the shares in the basic service provider.

Successful installation of the new system linking Antananarivo and Toamasina is a *sine qua non* for any program to enhance export performance.

TELECOMMUNICATIONS

Telecommunications -- the Existing System

Telecommunications in Madagascar have been the responsibility of the Ministry of Posts and Telecommunications (MPT). As a public administrative entity, the Ministry has been constrained by having to submit its annual budget for approval by the National Assembly, by the requirement for prior approval of all expenditures, and by the administrative determination of rates for its services.

Telecommunications services deteriorated sharply in recent years as an outdated system became overloaded. As shown in Table 1, the number of telephone subscribers in Antananarivo more than doubled between 1980 and 1991 and almost doubled nationwide. Residential phones are quite limited; some 48% of the subscribers in the capital in 1991 were businesses and other offices. Fax lines were introduced in 1989.

TABLE 1. Installed Telephone Lines

Nombre de Lignes par Type de Communication (0)	1980 (1)	1991 (2)
- Téléphone (nombre de lignes principales: LP)		
. Antananarivo	8 307	18 813
. Ensemble	18 596	33 252
- Telex (nombre de lignes)		
. Antananarivo	212	346
. Ensemble	302	475
- Telefax (nombre de lignes)		
. Antananarivo	-	419
. Ensemble	-	465
SOURCE: MPT		

Madagascar's telephone density is extremely low at less than 0.3 telephone lines per 100 persons. In Europe and North America, telephone density is about 50 lines per 100 people. By way of comparison, telephone density in Malaysia is 8, in Mauritius about

4 and in Thailand 2.[5] Mauritian businessmen are said to have reached the stage of using cellular phones in their automobiles.

There is a backlog of about 3,000 requests for telephone installation in Antananarivo. Existing lines are saturated. One estimate made by telecommunications technicians was that barely half of calls got through during peak business hours. Breakdowns are commonplace, running as high as 74% of installed lines in 1990.

Phone rates are very high but are not based on real costs; nor are they modulated to encourage more use during off-peak hours and less during peak times. Reliance on a minimum charge for three minutes means that fax messages transmitted in one minute or telex messages sent in 30 seconds are billed at the same rate as a three-minute conversation. Some 25% of phone charges billed by the PTT remain unpaid.

International Telecommunications

Access to the international network is controlled by STIMAD, a mixed enterprise established on the basis of an agreement between the Government and a French company, France Câble et Radio (FCR), in September 1970. The State holds 53% of the shares in STIMAD and FCR 47%. STIMAD is under the aegis of the MPT Ministry.

International rates have risen by a much greater percentage than domestic rates since 1980, as shown in Table 2.

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[5]Figures for all but Mauritius were taken from William W. Ambrose *et al.*, *Privatizing Telecommunications Systems: Business Opportunities in Developing Countries.* Washington DC: International Finance Corporation, 1990. Page 14.

TABLE 2. Telephone Rates (first 3 minutes) (in FMG)

Taxe de base (0)	1980 (1)	1990 (2)	1991 (3)
- Tarifs nationaux			
. Téléphone	50	115	...
. Telex	90	160	...
. Telefax	-	120	...
- Tarifs internationaux			
. Téléphone	1 087	...	6 420
. Telex	604	...	6 590
SOURCE: MPT			

The acute frustrations of exporters, shipping agents and shipping companies with the existing telecommunications system was mentioned above. Almost without exception those we interviewed considered the inadequacies of the system, in particular their inability to make a connection, to be the major constraint to improved export performance at the present time.

More than one of these individuals remarked that while they themselves have found ways to cope with the situation, newcomers would be so shocked at the lack of facilities taken for granted elsewhere that they would be at a serious disadvantage. The managing director of the Floreal sweater mills stated that it would be almost impossible for him to manage his business if all of the programming for his inputs as well as his output were not done by headquarters in Mauritius. Until a new system is installed, telecommunications problems will seriously hamper Madagascar's ability to expand exports.

Institutional Reform Study

Faced with the glaring inadequacy of the existing system, lack of funding for new investment and bureaucratic constraints, the Ministry of Posts and Telecommunications requested a French consulting firm to conduct a study of institutional reform in collaboration with two local firms. The study was financed by the *Caisse Française de Développement.*

A study group (*cellule de réflexion*) bringing together representatives from Ministerial departments and of business and labor groups considered the results of the study in April 1992.[6] Noting that donors were requiring privatization of PTT functions as conditionality for any new telecommunications projects and that international institutions such as the International Telecommunications Union were recommending radical changes in PTT management, the group recommended the following reforms.

- Complete separation of regulatory authority and operational responsibility;
- Separation of postal and telecommunications functions;
- Fusion of domestic and international systems;
- Telecommunications services should have managerial and financial autonomy and commercial operations should be placed in the hands of a single operator; and
- An outside partner should be sought, possibly a consortium, to invest in network development, but the partner should be chosen without regard to sources of donor funding.

A World Bank mission in April 1992 noted the recommendations of the study group and encouraged the Ministry of Posts and Telecommunications to move to implement the reforms. The Malagasy government issued a sectoral policy statement on June 30, 1992, committing itself to the first three reforms as well as to others. The World Bank mission was also informed of the Five-year Telecommunications Investment Plan (1992-97) which was to be presented to donors in a round table meeting in October 1992. Delays have moved the round table to March 1993, and the Plan now covers the period 1993-1998.

Telecommunications Investment Plan

The amount to be invested in modernizing and privatizing the telecommunications system over a five-year period is $150 to $170 million. There are three components to the program, two of which are at present more clearly defined than the third.

1. The most urgent need is the installation of a digital POTS environment to cover the capital, the second largest city and the principal port. France, via

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[6]MPT, Secrétariat d'Etat. "Rapport de synthèse des travaux de la Cellule de Réflexion du Ministère sur 'La réforme institutionnelle des PTT.'" Antananarivo, 07-16 avril 1992.

the *Caisse Française de Développement*, is prepared to loan up to 135 million FF (about $25.5 million) for this component, primarily for switching and transmission equipment[7]. The World Bank is providing about $10 million to modernize and expand considerably the urban telecommunications networks themselves. The number of subscribers is to be almost doubled from its current level of about 33,800 to 61,700.

2. Japan will assist in rehabilitating the analog microwave system which unreliably ties the capital to the provinces. Japan has pledged about $8 million for this effort.

3. An expansion of satellite coverage from three to twelve ground stations would link Antananarivo with the provincial capitals and potential development poles or centers, either touristic or economic in nature. The location of these centers has not been determined. Funding is not yet available.

With somewhat less than $45 million promised, the plan will require over $100 million more to be fully realized. The African Development Bank is mentioned as one possible source. There is also the European Investment Bank, which attended a December 1992 meeting in Paris with the AfDB, the World Bank and the *Caisse Française*. The private entities that take shares in the new telecommunications operating company will also be expected to invest some capital.

Nonetheless, the Government's Director General for Privatization, who is keenly interested in the telecommunications plan, foresees some difficulty in obtaining the additional capital that will be needed. The situation is in flux. Negotiations with France are underway, and at this writing the date of the donors round table, to be convened by the Government, remains uncertain.

Privatization of the operating company will proceed in stages. STIMAD will have its domain extended to domestic telecommunications by merger with the Ministry of Post and Telecommunications, Direction des Telecommunications. When the new company

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[7]The *Caisse* has attached conditions to its 25-year 3% loan. These include the exclusion of non-French suppliers and a major, continuing role in the new company for FCR, a subsidiary of state-owned France Telecom. The Malagasy government, supported by potential donors, is understood to be holding out for international competitive bidding.

is created -- in principle in February 1993 -- the State's share will rise to 85% from 53% as a result of the acquisition of the domestic network, while France Câble et Radio's falls to 15% from 47%.

This transformation into more of a state-owned than a mixed enterprise will only be a stage leading to privatization and is expected to last for 18 months to three years. During this period two things are supposed to occur. First, FCR would help the BSP improve its management practices as it absorbs the domestic network. Second, if the Malagasy government and potential donors have their way, there will be an international tender for bids from private companies.

The World Bank expects that a consortium would emerge as the winning bidder for the 34% share being offered as a block. The State's participation would diminish to 34% as the remaining 17% is provided to employees and is sold to other investors. If FCR were not a member of the winning consortium, it might unload its 15% share as well. Finally, the State would sell much of its residual 34% little by little over time.

While the new company will operate the basic telecommunications network, providing standard services, additional services such as cellular telephones and data transmission may be opened up to private competitors. It is too early to tell how this aspect of the picture may evolve since a number of decisions have not been made. Among other things, the regulatory framework will be reviewed. More details will be made available at the donors round table conference.

AIR TRANSPORT

Current Air Links

From 1960 to 1992, Madagascar concluded 19 air transport agreements with other governments but only seven have been applied. The accords put into practice are with France, Italy, Kenya, the Comoros, Djibouti, Russia and South Africa. The link with Moscow, assured by Aeroflot, is presently suspended. Recent agreements not yet put into practice include China (1990) and Singapore (1992). Air Madagascar has company-to-company agreements with Air Mauritius and Air Réunion.

Long-haul flights are limited to four weekly connections between Antananarivo and Paris with Air France and Air Madagascar each responsible for two. Air France now makes intermediate stops at Lusaka and Lilongwe on one flight, and at Marseilles, Djibouti and Moroni on the other. Air Madagascar's Boeing 747 stops at Djibouti on one flight, and at Nairobi and Zurich on the other. The Zurich rights are the result of a company-to-company agreement.

Regional air links connect Madagascar with the Comoros, Mauritius, Réunion and South Africa. Air Madagascar conducts joint flights with the national airlines of the latter three. Air Comores flies between Mahajanga and Moroni-Hahaya in the Comoros while Air Réunion shuttles between Réunion and Toamasina.

Expansion of Air Links

Since so few air links have been established and Air Madagascar retains its monopoly over international rights, it appears to some observers that competition is being stifled, thus limiting export potential. The former head of air transport in the MTMT Ministry contends, however, that bilateral accords are relatively easy to negotiate since no commitments are made. The difficulty arises in creating an interest in the Madagascar market on the part of a foreign carrier, which would be obliged to pay royalties to Air Madagascar if it initiated the air link by itself. Singapore Airlines, for example, showed no interest in flying its aircraft to Madagascar after the respective governments had signed an agreement.

One opening was created for a foreign carrier and then lost for unexpected reasons. China Airlines, Taiwan's state-owned carrier, has had a twice-weekly flight from Taipei to Johannesburg and return with an intermediate stop at Mauritius. A former chairman of Air Madagascar states that about two years ago he was able to persuade the airline to substitute Antananarivo for one of the four stops at Mauritius. Because of the higher cost of jet fuel at Antananarivo, it was decided to stop enroute to Johannesburg rather than on the return flight. Two weeks after China Airlines made its first landing in Madagascar, however, the political troubles and demonstrations of 1991 began. The airline reverted to a stop at Mauritius and has not returned.

To create opportunities to carry exports by air to new destinations, particularly toward markets in inhabitual (for Madagascar) but promising regions such as southeast Asia, air traffic flows have to be encouraged and developed by whatever means. Tourists and businessmen should be given easier access to *la Grande Ile*.

Air Madagascar has not always been devoted to this philosophy. For example, Air France recently proposed that a flight to the Seychelles continue on to Antananarivo. (There is an agreement between the two governments.) It was suggested that receipts be divided three ways between Air Madagascar, Air France and Air Seychelles. If passengers began to develop an interest in the flight, the two national airlines might consider establishing their own link. Air Madagascar, however, vetoed the proposal despite its costless and potentially profitable nature.

Air Madagascar Privatization Issue

The World Bank's structural adjustment credit to assist industry and promote exports (CAPIE) carries as one of its conditions that air transport be privatized. Privatization has in fact begun, as mentioned above, but remains limited and the implementing texts have not yet been published.

According to the Secretary General of the Transport Ministry (MTMT), privatization has been delayed by the need to assure aeronautical safety. The creation of an institute of transportation technology, which would perform this task, has been proposed. Funding and qualified personnel have not yet been found. In the interim, according to the Secretary General, the Ministry has undertaken negotiations with an organization that would be able to provide the necessary services.

Both within the Ministry and at Air Madagascar concern is expressed on the future course of liberalization and privatization. It is pointed out that deregulation of the airlines in the United States, for example, has not produced some of the positive results anticipated. There is also worry that once Air Madagascar is obliged to compete on domestic routes, private carriers will concentrate on the profitable ones and leave Air Madagascar to take losses on the unprofitable ones. The company calculates that as few as 12 of its 50 airports have enough traffic to make them profitable. It is not clear, however, whether this means unprofitable at the current low fares or unprofitable at any conceivable fare.

It has been the case for some time that Air Madagascar subsidizes its low-fare domestic routes with high-fare international routes. Fares are proposed by the company and approved by the Transport Ministry. At present the Ministry may be unwilling to approve higher domestic fares for socio-political reasons: lack of other means of communication to open access to some isolated regions, low purchasing power of the population. However, once routes are opened to competition fares will presumably be set by the market. On the competitive routes there is apt to be downward pressure after an initial rise, but on the currently non-profitable routes left to Air Madagascar, the company will have little choice but to raise fares closer to a break-even level if it is to survive financially.

The Government states that Air Madagascar will eventually be privatized, either by selling it to local investors (an unlikely scenario) or by allowing foreign airlines to acquire a majority of shares. Air France used to own 25% of Air Madagascar, but its participation is now said to be much lower, less than 4%. The Transport Ministry states that a study is underway on ways to take Air Madagascar into the private sector. But for the time being the decision has been made to keep it as a public enterprise.

Air Freight Data

The evolution of air freight shipments to and from Madagascar in the 1988-1991 period are shown in Table 3. The effect of strikes and political upheaval in 1991 are clearly shown in the downturn experienced after volume increases in 1989 and 1990.

TABLE 3

Company	1988	1989	1990	1991
LONG-DISTANCE AIRFREIGHT (metric tons)*				
Air Madagascar	2,433	2,792	3,486	2,618
Air France	1,956	2,010	2,254	1,508
Aeroflot	110	84	73	46
Sub-total	4,499	4,886	5,813	4,172
REGIONAL AIRFREIGHT (metric tons)*				
Air Madagascar	439	705	1,102	468
Air France	884	945	435	248
Air Mauritius	434	522	729	547
Air Comores	14	19	16	10
Air Reunion	10	28	30	14
South African Airways	0	0	8	32
Sub-total	1,781	2,219	2,320	1,319
DOMESTIC AIRFREIGHT (metric tons)*				
Air Madagascar	4,545	3,040	3,025	1,875
TOTAL	10,825	10,145	11,158	7,366
AIRFREIGHT EXPORTS (metric tons)**				
Above companies together	2,897	2,990	--	--

SOURCE: Air Madagascar
*Freight including postal packets **Freight not including postal packets

Air freight rates between Madagascar and Europe are negotiated with Air France and vary from product to product. High value exports such as vanilla are charged more than low value exports such as green beans. Loading and unloading costs are taken into consideration along with estimated fuel consumption. These costs are such that an absolute minimum rate is 5 FF per kilogram.

Rates between Madagascar and Europe are roughly equivalent to those applied between Mauritius and Europe. For knit goods, for example, such as sweaters exported to Europe by Floreal from its plants in both countries, the rate is 8.30 FF/kg from

Madagascar and 8.50 FF/kg from Mauritius. For food crop exports from Madagascar the rate is around 9 FF/kg, a level which puts Malagasy exporters at a disadvantage compared to their Kenyan competitors, who pay 6 to 7 FF/kg shipping from Nairobi.

SEA TRANSPORT

About two thirds of Madagascar's sea shipments pass through the port of Toamasina (Tamatave), one of the few ports on the east coast and the only one really equipped to handle containers. In 1990, Toamasina handled 783,000 metric tons of dry cargo, 31% more than it had handled in 1984. The country's 14 other ports took 469,000 metric tons of dry cargo in 1990, 15% less than in 1984.[8]

There are three other principal ports: Antsiranana (10% of maritime traffic in 1989), Mahajanga (9%) and Toliara (3%). Nosy Be has been added to the itineraries of feeder lines and is becoming more important.

Port of Toamasina

The country's principal port handles container shipments well: compared to others in the Indian Ocean region, it is considered to be a very good port for fully containerized ships. Madagascar's problem is that several of its exports, particularly primary products that require coastal shipping to Toamasina, such as coffee and vanilla, do not lend themselves easily to containerization.

Coastal shipments of bags stacked in the hold (*frêt conventionnel*), as opposed to bags or boxes stacked on pallets, pose the most difficulty. There are, for example, three separate handling operations for 50 kg. coffee bags brought from Manakara stacked in the hold of the CMN ship Vatsy and then transferred to containers. (See Appendix B.) Rain, which does not affect container operations, halts bagged or boxed shipment activity, and it rains often in Toamasina. The only compensation is that stevedoring is less expensive than in Port Louis and other competing ports.

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[8]République Démocratique de Madagascar, "Etude sur le secteur des transports," 10 mai 1991. Washington DC: World Bank, p. 9.

The port is operated by the *Société d'Exploitation du Port de Toamasina* (SEPT), which combines the functions of a port authority with those of a stevedoring and mechanized freight handling enterprise. It is wholly owned by the state but has management autonomy. The Director General of SEPT reports to a board chaired by the Minister of Transport. There are currently 13 other board members: five from government ministries, five from the ranks of SEPT personnel and three from the Toamasina region.

In general, shippers appear satisfied with the services they get. One representative states that SEPT does a good job trying to satisfy its clientele. Things could always be improved, but there is a seriousness, a rigor, to SEPT's approach which is appreciated. Another states that there has been a clear improvement in the past few years and that Toamasina is as efficient as Port Louis or Réunion, if not more so. The fact that the port now works at night because thievery has declined has improved efficiency.

Further improvement in the future is expected by shippers. Communications will be improved by the addition of a long-range single sideband (SSB) radio net in February 1993 that will allow voice communication with other ports as far away as the Seychelles, including all of the secondary ports in Madagascar. SEPT also intends to improve security with an infra-red system to detect unauthorized movements in warehouses and around containers. Port operations were to have been computerized in January 1993. (Statistics have been maintained in an up-to-date fashion but manually.)

SEPT is clearly better equipped to handle cargo, including containers, than it was four or five years ago. With three PPM super-stackers available to move containers rapidly, the port is capable of turning ships around faster and in this respect has caught up with Port Louis and Réunion. SEPT, however, wants to amortize its expensive equipment by obliging everyone to be served by it.

Port Louis, Mauritius, is going to leap ahead of Toamasina once again in 1993, however. According to a SMTM representative, gantry cranes will be installed there, allowing the port to load or unload up to 25 containers per hour with one gantry, compared to about 7 per hour with shipboard cranes. Such a development will probably make Port Louis a key load center for this corner of the Indian Ocean, and Toamasina should probably not attempt to compete with it on that level.

For Malagasy export goods, the major problems -- extra costs and any lack of competitiveness -- lie not so much in deficiencies in the port of Toamasina itself as those found in the inadequacy of the present telecommunications system and in backward linkages to internal transport, whether by road, rail or coastal ship.

The Intermodal Transfer Problem

Despite a record of improved efficiency in turnaround time for vessels,[9] the port of Toamasina is still hampered by a major bottleneck. Once export shipments have been cleared for loading, there is little to reduce their competitiveness other than the distance to a final destination. The difficulty lies at the intersection where shipments are transferred from land or coastal carriers to an ocean-going vessel in the port.

There is a serious bottleneck of a purely administrative nature -- delays for papers to be cleared by the Customs Service or to a much lesser extent by MINAGRI's inspection service (*Service du Conditionnement*). These delays are a clear hindrance to exports and add to their cost. Loading operations which should take six hours usually take nine or ten, according to one shipping company executive. Port authority officers, who maintain that sailings are delayed virtually every day for administrative reasons, produced documents showing that for one vessel carrying litchis recently there was no loading activity for nine hours out of a span of 12.5 hours.

As the latest World Bank Transportation Sector Study (May 1991) points out, even though the port operates around the clock, the Customs Service observes regular business hours and charges extra at other times. Consequently, officials are rarely available during regular hours, but when given the inducement of a hefty prime payment in off hours can clear a shipment in record time, according to the Bank report.

Before a container can be sealed and loaded on a vessel it must have a *document de scellage* signed by a Customs officer. The officer who supervises dockside activity, however, is usually not the one who signs. An effort must be made to find the responsible official and obtain his signature. It appears that there is no such thing as a

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[9]The SMTM representative, an experienced former ship's captain, noted that some ships used to take a week to unload and load cargo in Toamasina compared to only two days in Réunion or Port Louis for larger loads. Now, he maintains, turnaround time is as good, if not better, at Toamasina. Other observers would not necessarily agree that efficiency has improved that much.

routine signature. It is in the interest of Customs officers to allow no assumption that they will be obliged to give approval.

There is a recent example of this traditional attitude requiring an appeal to Customs for clearance rather than allowing any expectation of accommodation. In an effort to expedite litchi shipments in late 1992, the litchi exporters group (GELM) called a meeting of shippers and Customs agents. They suggested that an officer authorized to sign *document de scellage* be stationed on the quai whenever containers were being filled. The suggestion was rejected by Customs on the grounds that an authorized official could always be found, at home if necessary. The shippers, each apparently unwilling to risk being singled out for retaliation, voiced no objection.

Privatization of SEPT

There is disagreement between shippers and SEPT over the desirability of the former playing a larger role in freight handling. Shippers would like to use their own equipment and personnel to minimize delays; SEPT prefers to lease equipment from shippers temporarily if needed rather than allow agents to use their own equipment in the port. Agents may, however, employ their own tractors to tow trailers with containers in and out of the port area. The only exception to no private handling is the dispensation to the litchi exporters group (GELM) which permits them to transfer pallets stacked with boxes of litchis from trailers to containers.

The Director General of SEPT states that the principle of privatizing the freight handling enterprise has been accepted. He thinks, however, that political stability must be achieved first and does not expect privatization before 1994 or 1995. He states that the following activities will be included.

- the container "terminal" or open dock space used to store containers;
- stevedoring and mechanized freight handling;
- the grain silo;
- tugboat and pilot services; and
- warehousing.

SEPT has been a profitable state enterprise since 1987, but it has too many employees: 2,430. The number will be diminished by privatization, and jobs will be permanently lost. Employees have a powerful strike weapon, which showed its muscle in 1991 with a four-day strike that resulted in the replacement of the Director General. Privatization and staff reductions will have to be handled with care to avoid a paralyzing strike. It is worth noting that there was no strike at SEPT in the latter part of 1991 while strikes were halting economic activity elsewhere.

In making a profit, SEPT may have been aided by its ability to set its own rates, which it has had since 1986. These rates, which have regularly been raised, are posted in European Currency Units (ECU) rather than in Malagasy francs (FMG). This is a hedge against any weakening of the Malagasy franc since the Government has refused to cover SEPT's exchange rate risks. SEPT will begin reimbursement of a substantial loan from the *Caisse Française* in 1993 and might be penalized if unable to hedge.

For piloting and docking long-haul vessels, SEPT charges 90 percent more than it does for providing the same services to coastal shipping (*cabotage*) vessels. There is, however, a single rate for all freight handling services. Port authority staff maintain that their rates are well below those in other Indian Ocean ports, particularly Port Louis, Mauritius. One shipping company executive whom we met did not agree.

Ocean Freight Rates

Until the end of the 1980's, ocean freight rates between European ports and Madagascar were generally uncompetitive because the Capricorn Conference of shipping companies dominated the route. In 1984, for example, the Conference carried 85 percent of the cargo tonnage to and from the four Indian Ocean countries it served (Comoros, Madagascar, Mauritius and Reunion), using 15 long-haul vessels. Freight rates were as much as 150 percent higher than they are today.

The entry into the market in November 1988 of a powerful outsider, the Mediterranean Shipping Company (MSC), led to a marked reduction in sea freight rates. For example, an automobile shipped from Rouen, France, to Toamasina had been 140 ECU per cubic meter. MSC began to charge only 90 ECU/m3. The Conference, responding, brought its vehicle rate down to 110 ECU/m3 but quickly lost market share nonetheless. By 1990, the Conference's share had fallen to 55 percent, and in 1992 it was only 49 percent. At present Capricorn is limited to six container ships (1,000 TEU each)[10] and one feeder vessel.

Ocean freight rate comparisons between Madagascar and competing countries must be based on the content of the container. A container filled with a low-value commodity such as coffee is much cheaper to ship than a container with a higher-value export such as sweaters.

A container of coffee bags costs only 590 ECU to ship from Toamasina to a European port. If Malagasy coffee is more expensive than East African once landed in a European port, it is not because of higher ocean freight rates but because of higher costs getting the coffee from its source into a container at Toamasina.

The rate to ship containers with knit goods from Toamasina to a European port is 1,300 ECU, compared to 1,000 ECU for a similar container shipped from Port Louis, Mauritius. With both ports now operating on approximately the same level of efficiency, this differential is surprising. It is due in part to the greater risks of navigation in the Toamasina roadstead.[11] Shipping companies like SMTM also attribute the differential to the legacy of the past, when turnaround time was much longer in Toamasina.

For shipments over the short distance between Port Louis and Toamasina the rate is proportionally much higher, 650 ECU, even though most long-haul ships call at both ports. This adds to the costs incurred by a textile company such as Floreal since it brings in two containers of yarn, cloth and other inputs from Mauritius for every three containers it ships to Europe.

MSC considers rates very competitive now and does not think they can go much lower. SMTM would agree. Buyers in export markets, however, want even lower rates since world prices of some of Madagascar's primary product exports have fallen and demand is sluggish.

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[10]Container ship capacity is measured in twenty-foot equivalent units (TEU), this being the smaller and most common of the standard container sizes. All of the containers seen at Toamasina were twenty-foot units.

[11]The former ship's captain from SMTM reports that until recently there were only two buoys, two lights and one underpowered tugboat more than 20 years old. A second and more powerful tugboat has been delivered and is *en route* from Europe. The World Bank has been helping to improve navigational aids.

Most Malagasy exports are sold FOB Toamasina. This being the case, it is the export buyers who are able to designate which bottoms will carry their shipments.

Ocean Freight Competition

The "Conference" which carried the vast bulk of shipments between Europe and this part of the Indian Ocean for many years is officially the Conférence Internationale Madagascar Comores Réunion Maurice (CIMACOREM). In its heyday the Conference consisted of six carriers:

- the *Navale et Commerciale Havraise Péninsulaire* (NCHP),
- the *Compagnie Générale Maritime* (CGM),
- the Scandinavian East Africa Line (SEAL),
- the *Société Nationale Malgache de Transports Maritimes* (SMTM),
- Hansa, and
- the *Société Navale Caennaise* (SNC).

SNC was absorbed by NCHP, which in turn has become part of the Delmas conglomerate, SCAC-Delmas Vieljeux (SDV).[12] NCHP ships still carry the NCHP name, however. Hansa has been taken over by Hapaglloyd, a German firm. SEAL was absorbed by the *Deutsche Afrika Linie* (DAL), which left the conference in January 1992.

The four remaining entities make up the Capricorn Conference, which is a subsidiary of CIMACOREM. The Conference, which as CIMACOREM used to manage its ports of call as well as set uniform freight rates for its members, now engages in joint management of members' shipping assets. Capricorn members conclude three-year agreements which specify the percentage of the Conference's business which will be attributed to each member. The current agreement lasts until mid-1994. Under it there is the following split.

- NCHP 54%
- CGM 27%
- SMTM 13%

[12]See *Jeune Afrique* nº 1641 of 18 June 1992, pp. 36-39, for an article entitled "*Finis les cartels, place à la concurrence,*" which mentions heavy fines levied on SDV and SNC by the European Commission in April 1992 for cartelization of sea shipments between Europe and West and Central Africa.

- Hapaglloyd 5%

SMTM finds itself in the anomalous position of being a shipping company without ships. At the end of 1991 the line was in financial difficulty, having lost money on an ill-advised attempt to make runs to southeast Asia. Entry was costly and one of two ships was lost in a cyclone. With an operating deficit of some 40 million FF in 1991, SMTM found itself obliged to sell its two remaining ships (450 TEU each, not fully containerized) to Delmas.

Capricorn competes with other "outsider" shipping companies in addition to MSC. MSC is by far the most important. The others are DAL, MARSHIP, MARFRET and Besta Line. These companies, along with Conference members, are the so-called "regular" or scheduled lines that call at Toamasina. Non-scheduled ships call frequently as well, often bringing bulk cargo such as cement, fertilizer or wheat. Conference vessels may also carry bulk shipments such as wheat and accept non-containerized cargo (*frêt conventionnel*) while MSC sends only container ships to Madagascar for long-haul shipments.

MSC is considered by itself and by others to have close to 40 percent of the volume of Malagasy dry cargo (non petroleum) ocean freight. MSC is carrying about 50 percent of Malagasy coffee exports. In the first three quarters of 1992, MSC carried 35, 30 and 35 percent of total dry cargo Malagasy exports, respectively. In the same period, the Conference's share was 44, 54 and 38 percent, respectively.

MSC's long-haul ships call at Toamasina two or three times a month and pick up 200 containers each. The line also has three ships (12,000, 8,000 and 5,000 tons displacement) which serve as feeders by calling at Mahajanga, Nosy Be, Antsiranana and Toamasina as well as at the principal Indian Ocean ports (Durban, Port Louis, Comoros).

Coastal Shipping (*Cabotage*)

Coastal shipping is considered costly for three reasons:

- an inability to make through shipments and the multiple handling and attendant losses that result;
- poor working conditions in the secondary ports; and
- low volumes of freight.

Coastal shipping rates are loosely based on a set of rates published in June 1988 by the Union (*Tarif No. 13 des frêts au cabotage entre les ports de Madagascar*) which serves as a reference but is not respected. Small coastal shippers charge less than the minimum published rates. Regional shipping rates in the Indian Ocean, however, are set competitively and are kept down by what others consider to be South Africa's attempts to dump goods on the market.

The Secretary General of the Transport Ministry (MTMT) states that coastal shipping, which had been restricted to Malagasy flag vessels, was recently liberalized because the *Compagnie Malgache de Navigation* (CMN), a state enterprise, was unable to meet its obligations.

The MSC Commercial Director says that national *cabotage* is still restricted to ships flying the Malagasy flag, the legal text liberalizing *cabotage* having not yet been issued. Others seem to think that liberalization has already occurred *de facto* since:

(i) the Government issued a waiver allowing two vessels of the foreign-owned Malagasy Shipping Line (MSL) to operate; they now fly the Malagasy flag; and

(ii) the *Société Malgache de Cabotage* (SMC), which was created six months ago as a feeder for Capricorn Conference ships, does not have majority Malagasy ownership. Delmas, the Conference heavyweight, owns 51% of the shares.

CMN has five vessels, one of which is used mainly for regional shipping, the 5,300-ton *Onilahy*. She is capable of taking a few containers and makes a circuit between Toamasina, Capetown, Durban, the Comoros, Réunion and Port Louis. A sister ship was sunk in March 1992 after a collision off South Africa. She has been replaced by a 8,700-ton vessel leased by CMN in June 1992.

CMN's remaining four ships are strictly for coastal shipping:

- the 1,300-ton capacity *Vatsy*;
- the 250-ton *Vatsy 2*; and
- the *Vatsy 3* and *Vatsy 4*, each of 1,000 tons.

In fact, the vessels are both old and poorly adapted to coastal shipping: of the four, only *Vatsy 2* is small and maneuverable enough to be used where it is really necessary. *Vatsy 2* is a "beacher," a landing craft that has cargo bay doors and a shallow draft allowing it to be driven onto shore. Now that they are older and require heavier maintenance, the CMN ships need higher load rates to break even and they are not getting them. The SMC ships are too large (1,500 ton capacity), are old and are not well adapted either.

Most secondary ports, the exceptions being Antsiranana, Nosy Be, Toliara (Tuléar) and Mahajanga, do not handle containers. As shipping is becoming more containerized, this poses a problem. MSC takes only container shipments but CMN does not transport containers to Toamasina for transfer to MSC vessels. Thus coffee bags shipped from Manakara on CMN vessels have to be placed in containers once they get to Toamasina.

Improvements are being made, if slowly. Nosy Be is now capable of shipping out 300 refrigerated TEU containers per year and Mahajanga 150, along with containers of coffee, pepper, sugar and cocoa. In 1991, a 25-ton crane was installed at Nosy Be. This enables shippers to load containers on the pier itself rather than in the cramped quarters of barges into which cargo used to be lowered.

These secondary port improvements and a desire to regain market share from MSC may be among the factors that led the Capricorn Conference three years ago to start a bi-weekly circuit of its 400-TEU feeder ship to the ports of Mahajanga, Nosy Be, Antsiranana, the Comoros, Réunion, Port Louis and Toamasina. The feeder ship transships to a long-haul Conference vessel at either Réunion or Toamasina, whichever affords the most rapid connection. The Conference calls at each port every ten days.

Competition from MSC on long-haul routes has induced Capricorn to become competitive in coastal shipping. Exporters will benefit from more frequent service and improved handling. Such could be the case at the smaller secondary ports as well if *cabotage* were fully liberalized.

In sum, Madagascar's export performance could benefit from greater liberalization of air and coastal sea transport as well as from policies that facilitate intermodal linkages.

APPENDIX A

LIST OF PERSONS INTERVIEWED

Antananarivo

Charles Andriantsitohaina	Groupement des Entreprises de Madagascar (GEM)
Zaboubakary Assany	General Manager, Compagnie Malgache de Navigation, tel. 255-16
Anil Barday	Président Directeur Général, Omnium Industriel de Madagascar, tel. 223-73
John Hargreaves	Directeur Général, Floreal Madagascar, S.A., tel. 228-69
Dieudonné Harison Lala	Ingénieur Principal de la Navigation Aérienne, Division Personnel Navigant, Ministère des Transports, de la Météorologie et du Tourisme (MTMT)
Roger Henri	Directeur Général Adjoint, Air Madagascar
Bernard Pachoud	Directeur Général, Société Commerciale de Transports Transatlantiques, tél. 225-49/242-63
Renaud Rajaonah Rahagafotsy	Directeur Général, Délégation Générale du Gouvernement à la Privatisation
Solonaivo Rakotomalala	Directeur Général, Société Travaux Aériens de Madagascar (TAM)
Désiré E.Ralijaona	Président, Groupement des Opérateurs Privés Malagasy, tel. 322-84
Eugène Rambelontsalama	Inspecteur Commercial, Société Nationale Malgache de Transports Maritimes (SMTM), tél. 273-42
Pierre Rambeloson	Directeur Commercial, Mediterranean Shipping Company, tel. 430-05
Mme Ramelina	Secrétaire Général, Ministère des Transports, de la Météorologie et du Tourisme (MTMT)
Nicolas Randrianantoanina	Chef du Service Planification des Télécommunications, Ministère des Postes et de Télécommunication (MTP)

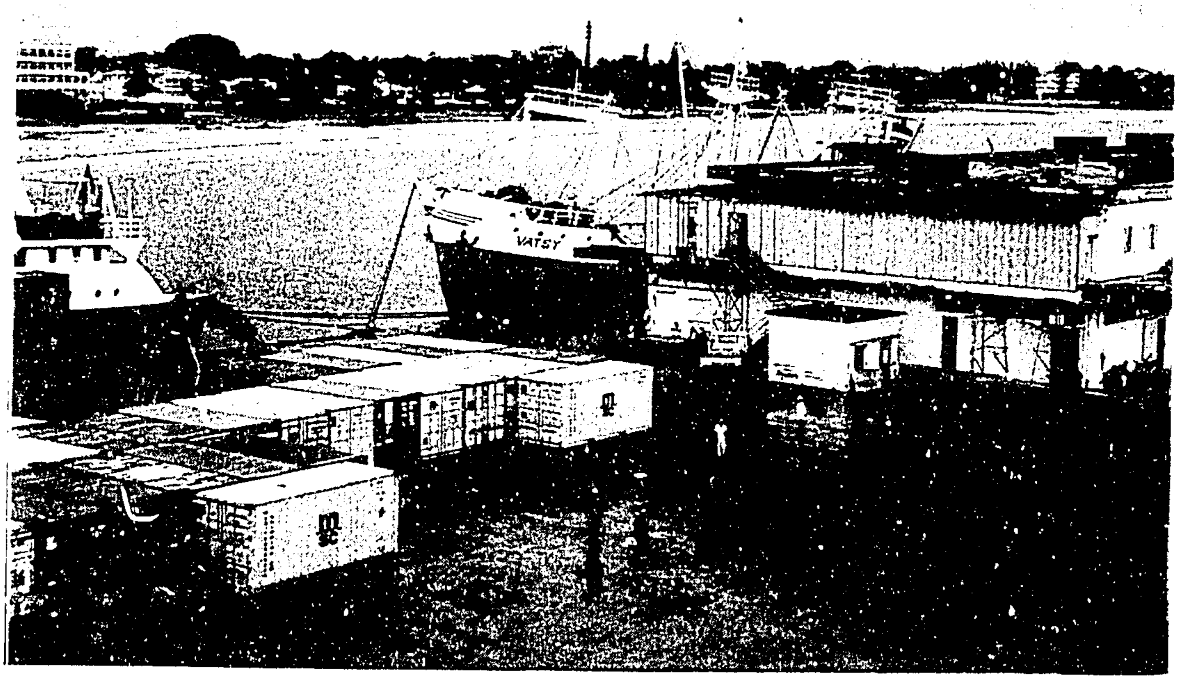
Séraphin Ravelona	Chef du Service de la Coordination des Transports, Ministère des Transports, de la Météorologie et du Tourisme (MTMT), tel. 346-95
Herizo Razafimahaleo	Directeur Gérant, Service Trading Etude et Décision Industrielle et Conseil (STEDIC), tel. 203-10
Roland Razakanaivo	Directeur Général Adjoint, Société Auxiliaire Maritime de Madagascar (AUXIMAD), tel. 225-02

Toamasina

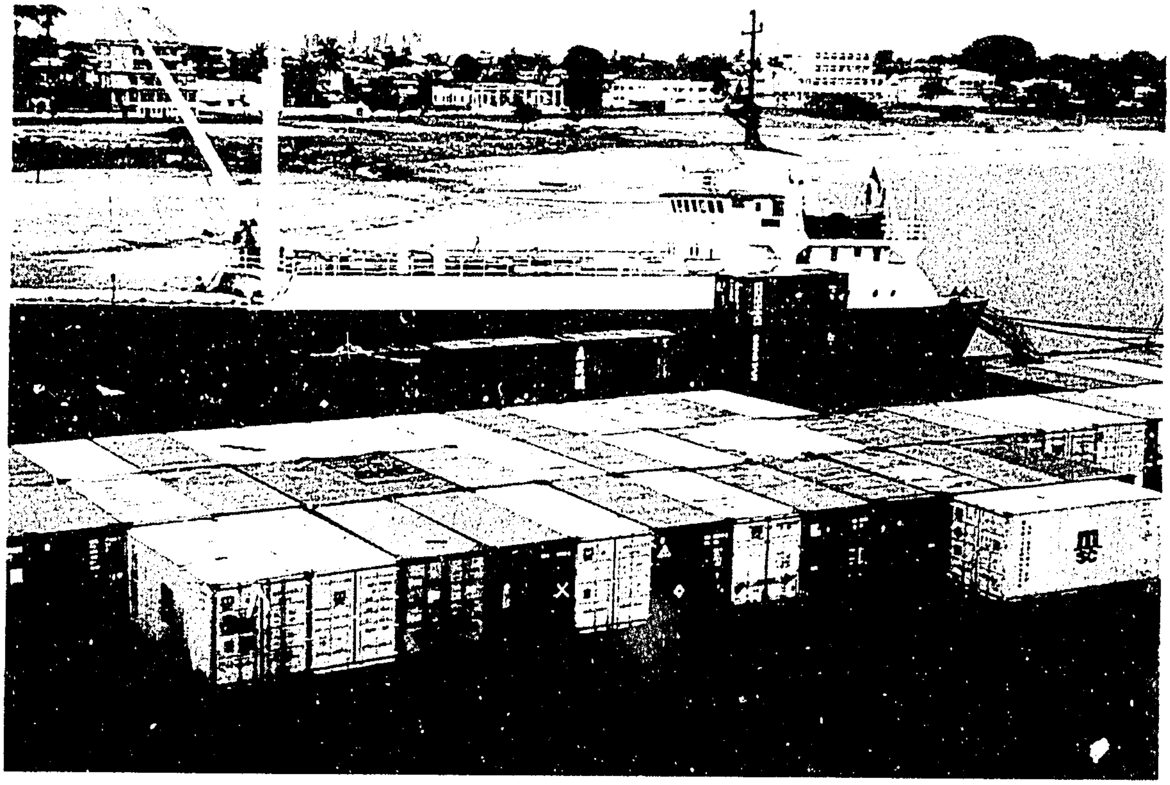
Emmanuel Aristide	Directeur Général, Société d'Exploitation du Port de Toamasina (SEPT)
Michel Gonthier	Sous-Directeur de la Ligne Scandinave-Tamatave
Nicolas Imbiky	Directeur d'Exploitation *a.i.*, Société d'Exploitation du Port de Toamasina (SEPT)
Andrianandrasana Rajoelarinosy	Directeur Général, Mediterranean Shipping Company Madagascar, S.A. (MSC)
René Max Zafinandro	Chef de Département Commercial, Société d'Exploitation du Port de Toamasina (SEPT)

APPENDIX B
PHOTOGRAPHS

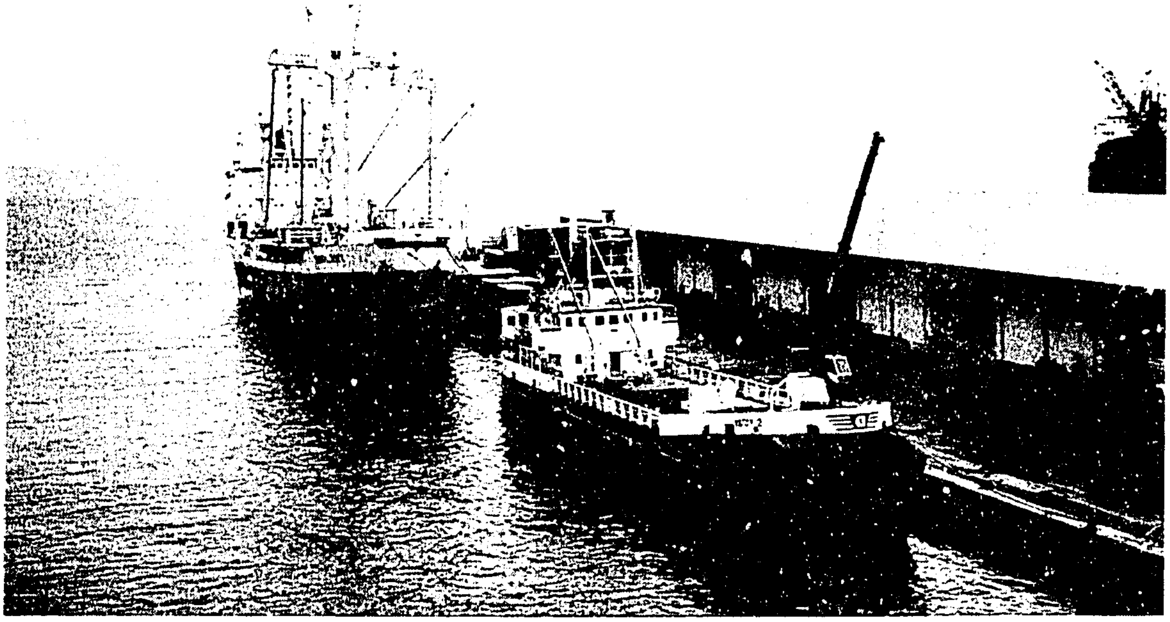
The following photographs were taken in the port of Toamasina (Tamatave) in December 1992.



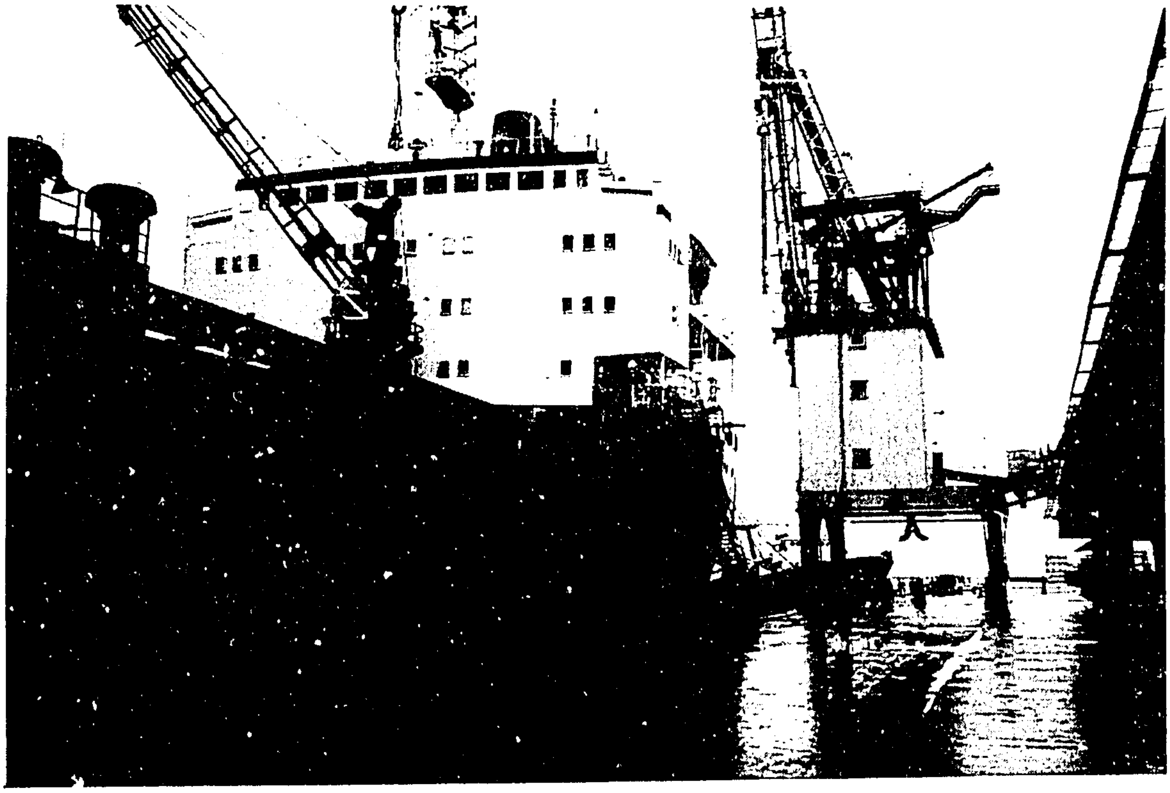
Left: *Ilderm VI* of Valetta. Right: CMN's *Vatsy* with a load of coffee bags from Mananjary to be loaded into containers foreground.



Containers for coffee with the *Ilderm VI* behind.

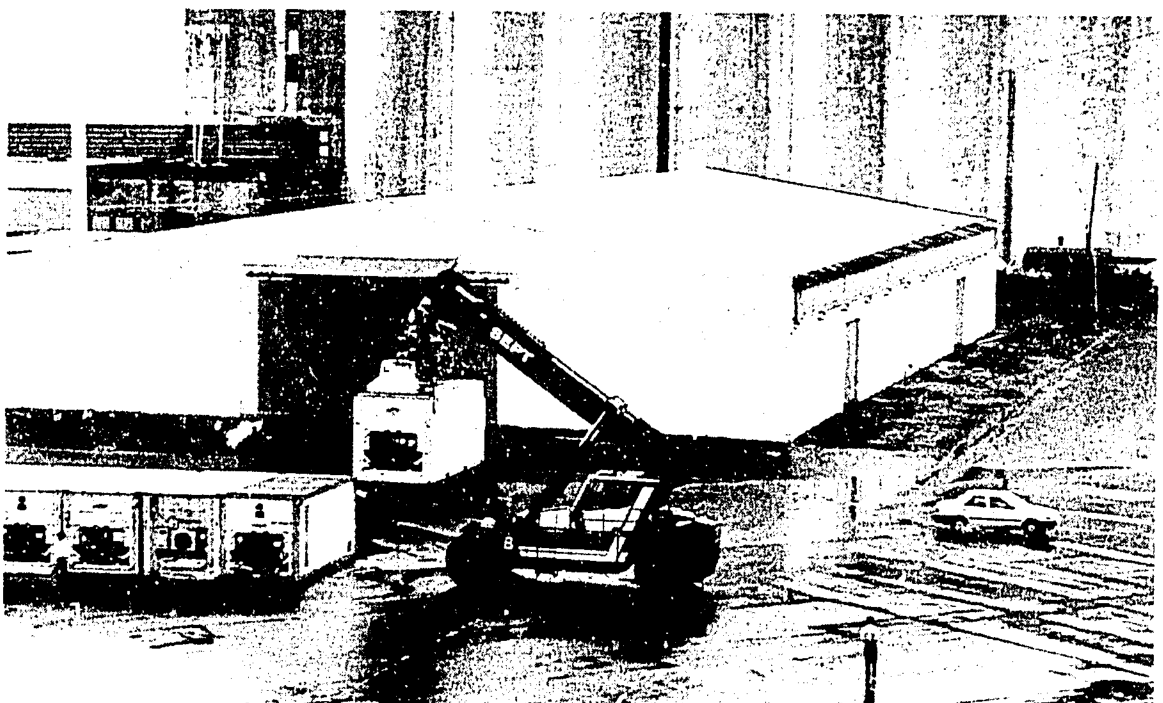


Rear: CMN's 5,300-ton *Onilahy*, which carried sugar bags from Antsiranana.
Front: CMN's 250-ton *Vatsy 2*, a "beacher" with cargo hold doors open.



The *Marios* of Valetta moored and idle in the rain. The previous day she unloaded cement.

Refrigerated containers loaded with boxes of litchis.



One of three PPM super-stackers places a :ontainer. Grain silos are behind.