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Report No. 10618

PROJECT COMPLETION REPORT

DEMOCRATIC REPUBLIC OF MADAGASCAR

CYCLONE REHABILITATION PROJECT
(CREDIT 1526-O-MAG)

AND

SUPPLEMENTAL CREDIT
(CREDIT 1526-1-MAG)

MAY 11, 1992

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Infrastructure Operations Division
South-Central and Indian Ocean Department
Africa Regional Office

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CURRENCY EQUIVALENTS

Currency Unit	=	Malagasy Franc (FMg)
US\$1	=	FMg 560 (appraisal)
US\$1	=	SDR 0.986 (appraisal)
US\$1	=	FMg 972 (average)
US\$1	=	SDR 0.849 (average)

ABBREVIATIONS AND ACRONYMS

ASECNA	=	Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar (Regional Aviation Authority)
BFV	=	Banky Fampandrosoana Ny Varotra (National Commercial Bank)
BTM	=	Bankin' Ny Tantsaha Mpamokatra (Rural Development Bank)
CNC	=	Comité National de Coordination (Coordination Committee)
FIFABE	=	Agricultural Regional Development Enterprise (Marovay Irrigation)
JIRAMA	=	Jiro Sirano Malagasy (Water and Electricity Public Utility)
MTP	=	Ministry of Public Works
OPEC	=	Organization of Petroleum Exporting Countries
SEPT	=	Société d'Exploitation du Port de Toamasina (Port Authority)

FISCAL YEAR

January 1 - December 31

Office of Director-General
Operations Evaluation

May 11, 1992

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report on the Democratic Republic of Madagascar Cyclone Rehabilitation Project (Credit 1526-0-MAG) and Supplemental Credit (Credit 1526-1-MAG)

Attached, for information, is a copy of a report entitled "Project Completion Report on the Democratic Republic of Madagascar Cyclone Rehabilitation Project (Credit 1526-0-MAG) and Supplemental Credit (Credit 1526-1-MAG)" prepared by the Africa Regional Office with Part II of the report contributed by the Borrower. No audit of this project has been made by the Operations Evaluation Department at this time.

Attachment

A handwritten signature in black ink, appearing to be 'L. P. ...', is located in the lower right quadrant of the page.

PROJECT COMPLETION REPORT

DEMOCRATIC REPUBLIC OF MADAGASCAR
 CYCLONE REHABILITATION PROJECT
 (CREDIT 1526-0-MAG)
 AND
 SUPPLEMENTAL CREDIT
 (CREDIT 1526-1-MAG)

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PROJECT COMPLETION REPORT

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CYCLONE REHABILITATION PROJECT
(CREDIT 1526-0-MAG)
AND
SUPPLEMENTAL CREDIT
(CREDIT 1526-1-MAG)

PREFACE

1. This is the Project Completion Report (PCR) for the Cyclone Rehabilitation Project in Madagascar, for which Credit 1526-MAG in the amount of SDR 14.8 million was approved on October 30, 1984. A Supplemental Credit, in the amount of SDR 8.8 million was approved on August 5, 1986, and the Credit Agreement was amended accordingly. The Credits were closed on December 31, 1989, as scheduled in the Amending Agreement. They were fully disbursed and the last disbursements were on May 21, 1990 for Credit 1526-0-MAG, and May 18, 1990 for Credit 1526-1-MAG.
2. The PCR was jointly prepared by the Infrastructure Operations Division of the South-Central and Indian Ocean Department, Africa Regional Office (Preface, Evaluation Summary, Parts I and III), and the Borrower (Part II).
3. Preparation of this PCR was started during the Bank's final supervision mission of the project in July 1989, and is based, inter alia, on the President's Reports, the Credit Agreement and the Amending Agreement, supervision reports, correspondence between the Bank and the Borrower, and internal Bank memoranda.

PROJECT COMPLETION REPORT

DEMOCRATIC REPUBLIC OF MADAGASCAR
CYCLONE REHABILITATION PROJECT
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(CREDIT 1526-1-MAG)

EVALUATION SUMMARY

Objectives

1. The project's major objectives were to: (i) contribute to the physical and economic rehabilitation of the areas damaged by Cyclone Kamisy (of April 9, 1984) and Cyclone Honorinina (of March 15, 1986); (ii) support institutional arrangements appropriate for efficient coordination of reconstruction efforts on this and possible future occasions; and (iii) help develop measures to minimize the potential damage from natural disasters that are prone to occur to vulnerable areas of the country.

Implementation Experience

2. During the appraisal mission, IDA requested the establishment of a National Coordination Committee (CNC), assisted by external consultants, for the implementation of the project. The committee's performance was very good. Almost all the works were completed before the original schedule, and within the appraisal cost estimate. The bid documents were very well prepared and ready on time. There was no problem in the bid evaluation process and supervision of works was done smoothly. The performance of the contractors was generally excellent. The only exception concerned the rehabilitation of public buildings in Toamasina, the second phase of which was awarded to a contractor who, contrary to CNC's assertions, had badly performed under the first one. To overcome the problem, IDA required CNC to cancel the contract or to have the works managed by the supervising consulting firm. The latter was done and the works were carried out relatively well, even though the delays were not made up for.

Results

3. Overall, the project was successful in meeting its objective of rehabilitating infrastructure in areas damaged by the two cyclones. In addition, the credit financed an urban and drainage study for Mahajanga, which could serve as a basis for a future IDA assisted project in Madagascar.

4. On the institutional and financial side, the performance was also impressive. CNC was established on a permanent basis and has been useful and efficient for the repair of damages caused by more recent cyclones, particularly Cyclone Calasanjy in the spring of 1989.

5. Finally, the project included studies to provide technical solutions for low cost cyclone-resistant construction and lead to the preparation and dissemination of anti-cyclone construction standards, which are now widely used in Madagascar.

Sustainability

6. The Credit helped the Government strengthen its procedures for coping with natural disasters. When the Honorinina cyclone occurred in March 1986, CNC was able to react very quickly and some urgent works were started in April 1986, with the approval of the appraisal mission. More recently,

Government has been able to appropriately handle rehabilitation of infrastructure in areas damaged by cyclones and floods, albeit with some delays.

Findings and Lessons Learned

7. This project is another clear demonstration that, in special circumstances, IDA has the capacity to process a credit in as little as three months from identification to Board presentation. Efficient appraisal team and task management is obviously a critical factor in such a situation. Elapsed time between every step of credit processing was reduced, except the Board package which was sent as usual to the Executive Directors 13 working days before Board presentation. The project also showed that, in the absence of time for detailed project preparation, with strong supervision, it is possible to ensure that appraisal costs estimates closely match the actual costs at the end of the project.

8. The main lesson learnt is the necessity to have a strong coordinating unit on the Borrower's side, and to give it the possibility to manage the procurement process with flexibility. This lesson is particularly relevant at a time when a very sizeable effort to rehabilitate the infrastructure in the country is underway, and when the procurement legislation is being overhauled.

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PART I: PROJECT REVIEW FROM BANK'S PERSPECTIVE

A. Project Identity

1.01 Project Data

Name : Cyclone Rehabilitation Project
Credit Numbers : 1526-0-MAG and 1526-1-MAG
RVP Unit : Africa Region
Country : Madagascar
Sector : Urban, Transport, Water Supply and Sanitation

B. Background

1.02 Every year, Madagascar is hit by about ten cyclones or tropical depressions, during the cyclone season, from December to March. For most of them, the damage is minimal, but severe cyclones occur from time to time. The most devastating occurred in 1929, 1956, 1959, 1972, 1975, 1984 and 1986. In 1984, after the cyclone season, Cyclone Kamisy hit the City of Antsiranana on April 9, then Mahajanga on April 11 before crossing the Island from West to East, through Antananarivo to Toamasina. Due to the extreme violence of the winds (more than 250 km/h) and very heavy rainfalls, severe damage was caused in the provinces of Antsiranana and Mahajanga to ports, airports, roads, buildings, irrigation schemes and the power network.

1.03 Two years later, on March 15, 1986, another Cyclone, Honorinina, again severely struck Madagascar. It devastated the Toamasina area and damaged key infrastructure throughout the eastern part of the country, principally the breakwater of the Toamasina Port. Crops of coffee and cloves were partly destroyed (6% and 50% respectively), and the value of exportable stocks of coffee and cloves that were destroyed by the cyclone (1,900 tons and 3,560 tons, respectively) was estimated at US \$ 17 million.

1.04 In 1986, the cities of Toamasina, Mahajanga and Antsiranana had about 180,000, 120,000 and 70,000 inhabitants respectively. Their ports are the three main ports of Madagascar. In Mahajanga province, there is major agricultural infrastructure such as the irrigation zone around Marovoay (100 km south of Mahajanga), operated by the Betsiboka Rice Company (FIFABE), which is the country's second most important rice surplus area after Lac Alaotra. The area includes main cotton producing zones of Madagascar which support an important textile industry. Agriculture is less concentrated in the Toamasina province, which is specialized in export crops such as coffee, cloves, vanilla, bananas, peppers and lichees.

1.05 The President of the Republic of Madagascar requested, by telexes of April 16, 1984 and March 18, 1986, the assistance of IDA to help repair the material damage caused by these cyclones. To respond to these requests, Bank missions visited Madagascar from May 25 to June 5, 1984, and from April 13 to 27, 1986. The purpose of these missions was to estimate the damage, define the priorities and set up a rehabilitation program with cost details that could be proposed to IDA and other financing agencies.

C. Project Objectives and Description

Project Objectives

1.06 The major project objectives were to: (a) contribute to the physical and economic rehabilitation of the areas damaged by Cyclones Kamisy (April 1984) and Honorinina (March 1986); (b) support institutional arrangements appropriate for efficient coordination of reconstruction efforts; and (c) help develop measures to minimize the potential damage from natural disasters in the future.

Project Description

1.07 The first project (Cr.1526-0-MAG) consisted of the following physical components:

- (a) Ports. In Mahajanga, rehabilitation of Vuillemain and Barriquand wharves, repair of offices, housing and warehouses, repair or replacement of port equipment (navigational aids, launches, tugs and spare parts) and, in Antsiranana, rehabilitation of the old and new wharves, restoration of buildings and housing, and repair or replacement of port equipment.
- (b) Airports. In Mahajanga and Antsiranana, repair of air terminal, technical facilities, control tower, staff residences and hangars; replacement of equipment (radio, pylons, antennae, landing aids; generating set and fire engine); and restoration of meteorological stations including communication, telex and telephone equipment.
- (c) Roads. RN4: reconstruction of Amboromalandy Dike, bridge and spillway; RN8: rehabilitation between RN4 and Marovoay; and RN6: repair works between Ambondromany, Port Berge and Ambanja.
- (d) Public Buildings. Repair of educational buildings, administrative offices and public housing (about 35 buildings in Mahajanga and 31 in Antsiranana).
- (e) Agriculture. For FIFABE, restoration of its fleet by purchasing one tug and two barges; re-establishment of spare parts stock and repair of 15 buildings at Marovoay and Mahajanga.
- (f) Power. For the National Water and Electricity Company, Jira Sy Rano Malagasy (JIRAMA), rehabilitation of power plants and networks in Mahajanga, Antsiranana, Toamasina, Nossi-Be, Ambato-Boeni and Marovoay; repairs to buildings in Mahajanga, Antsiranana, Antananarivo and other sectors; and re-establishment of vehicle spare parts stock.

1.08 The project also included:

- (g) Housing credits to be made available through two banks, BTM and BFV, to private owners for the reconstruction of their houses, provided the damage was caused by the cyclone; the repayment period was ten years with two years of grace and the interest rate was 12 percent per annum.
- (h) Consulting Services. (i) Urban planning and drainage study for the low income neighborhoods of Mahajanga; (ii) two experts assisting the National Coordination Committee; and (iii) assistance in supervising program execution.

1.09 The second cyclone project included the following components, for Toamasina and Sainte-Marie:

- (a) Port. Rehabilitation of the breakwater, protection of Pier C and relocation of Tanio Lighthouse.
- (b) Airport. Repairs to buildings and replacement of navigation aid equipment.
- (c) Roads. Repair works on RN5, RN6 and in Sainte-Marie Island.
- (d) Public Buildings. Reconstruction of schools, health facilities and administrative offices in Toamasina and Sainte-Marie Island.
- (e) Consulting Services. (i) technical assistance to CNC; (ii) Toamasina breakwater study; and (iii) supervision of buildings reconstruction.

D. Project Design and Organization

1.10 In view of the emergency nature of the job, there was no detailed project preparation. When IDA received the request of the President of Madagascar for emergency assistance, in April 1984, the Bank decided to send an identification mission to assess damage and determine how best to assist Madagascar. However, in order to save time, the mission decided to define priorities and to appraise a rehabilitation project immediately. The same process was used in March 1986 for the second project.

1.11 In the pre-departure issues paper, it was suggested:

- (a) to require the establishment of a coordinating central unit for the whole project, taking into account the number of ministries involved (five);
- (b) to require decisions to avoid cumbersome procurement procedures, usual in Madagascar; and
- (c) to grant a US \$ 1.0 million PPF to finance emergency works, and to reallocate financial resources available under existing projects which could assist in the rehabilitation of cyclone damage, without changing the nature of the existing credits.

1.12 The above measures were proposed by the appraisal mission to the Government and agreed upon. The first requirement was met on July 20, 1984 by decree No.84/260 establishing a National Coordination Committee (CNC), under the responsibility of the Minister of Finance. The management of this committee was defined by the "Arrêté Interministériel 3177/84" of July 23, 1984. The second one was met by a special decree No.84/236, signed on July 18, 1984, to derogate to the common regulation of "Marchés Publics". In particular, the prior review of contracts by the Commission Centrale des Marchés (Central Tender Board) was waived. These arrangements were maintained for the supplemental credit 1526-1-MAG, until the closing date.

1.13 The most urgent studies and works were financed by a PPF No.P297-MAG and other existing credits: the Second Education Project (Cr.663-MAG), the Water and Sanitation Project (Cr.1002-MAG), and the Sixth Highway Project (Cr.1391-MAG). In 1986, the same thing was done for the second project with the Third Railway Project (Cr.1694-MAG).

E. Project Implementation

Credit Effectiveness and Project Start-up

1.14 Credit 1526-0-MAG was approved on October 30, 1984, for an amount of SDR 14.8 million, and signed on December 6, 1984. The initial date of

effectiveness was January 25, 1985. It was postponed to February 25, 1985. The only conditions of effectiveness were the signing of the subsidiary loan agreements between the Government and BTM, BFV and the "Agence pour la Sécurité de la Navigation Aérienne (ASECNA)", the signing of project documents ("conventions de travail") between CNC and the seven executing agencies, and the deposit of FMg 1.0 billion into the Project Advance Account. The Credit was declared effective on February 25, 1985. Credit 1526-1-MAG was approved on August 5, 1986, for an amount of SDR 8.8 million, and signed on August 18, 1986. The initial date of effectiveness was November 16, 1986. It was postponed to January 19, 1987, but the Credit was declared effective on December 9, 1986, when the only condition of effectiveness, the signing of the SEPT (Toamasina Port Company) subsidiary loan agreement, was met.

Implementation Schedule

1.15 The first project was originally scheduled to be completed by December 31, 1986. All the works were effectively completed by that date, and 91.7% of the credit was disbursed. The only remaining activity was the housing credit component. Meanwhile, Cyclone Honorina occurred in March 1986 and it was decided to extend eligibility for housing credits to owners of the Toamasina Region, and therefore to extend the Credit closing date, June 30, 1987, to that of the Supplemental Credit, i.e. December 31, 1989. Implementation of the second project was scheduled to be completed by June 30, 1989, in a three-year period. The main works were completed at that time, except for the reconstruction of public buildings in Toamasina, because of the failure of the main contractor, and 94.2% of Credit 1526-1-MAG was disbursed, as of June 30, 1989.

Procurement

1.16 Procurement action proceeded on time and satisfactorily, as Decree No.84/236, of July 18, 1984, allowed for expediting the procurement process. The bidding process for the major works on road RN4 and the reconstruction of the Amboromalandy Dike were started in June 1984, and the contract was signed in August 1984, i.e. after works were initiated. These very urgent works had to be completed before the rainy season, which begins in December, because this dike protects the rice fields (80,000 ha) against flood. As a matter of fact, they were completed on December 10, 1984, two months before Credit effectiveness. For the second project, the urgent repair works to the breakwater of the port of Toamasina started in December 1986, only one week after Credit effectiveness.

1.17 The main problem faced during the implementation period was the award of the reconstruction contracts for public buildings in Toamasina. The Ministry of Public Works proposed to divide the first phase in small contracts, in order to award these contracts to local firms without excessive risks, and the Bank agreed with this approach. Four contracts were awarded to four different contractors. Before this phase was completed, CNC proposed to award the rest of the reconstruction works to one of them, which was presented as the best contractor, its contract was amended, and the Bank agreed on June 10, 1987. As a matter of fact, in July 1988, the works executed by the three other contractors were satisfactorily completed, but not those executed by the one who was considered the best, and at the end of 1988, it was clear that this contractor was unable to perform its job. A supervision mission, in February 1989, proposed to terminate this contract, but CNC preferred to give more responsibility to the consulting firm, which was asked to manage the works itself. The result was relatively good, but with additional costs and delays. Nevertheless, it is clear that this amendment would not have been possible without the decree 84/236, requested by the Bank to expedite procurement. This was the only negative effect of this decree, otherwise very useful.

Project Costs

1.18 The comparison between appraisal estimates and actual costs of the project is shown in Part III, section 4. The appraisal cost estimates were US\$ 27.7 million and 15.8 million and the final costs were US\$ 28.4 million and 16.3 million, or for the total of the two credits, US\$ 44.5 and 44.8 million, respectively. This represents a cost overrun of 0.55% of the total project cost. Cost overruns under the roads and airport components were absorbed through adjustments to the public buildings component.

Disbursements

1.19 Actual disbursements from the Credit by year compared with appraisal estimates are given in Part III, section 3. Disbursements took place over two years and a half for Credit 1526-0-MAG and three years for Credit 1526-1-MAG, as estimated at appraisal, or five years for the two credits. Since the project was an emergency project, no comparison can be done with the Madagascar profile which indicates a period of seven years. The original closing date of June 30, 1987 could have been respected, but the Amending Agreement prepared for the supplemental credit changed the closing date to December 31, 1989, for the two credits.

Credit Allocation

1.20 The original and revised allocations, and actual disbursements for Credits 1526-0-MAG and 1526-1-MAG are shown in section 3, Part III. There was no formal reallocation. Categories 5 (initial deposit to the Special Account), 7 (unallocated) and partly category 6 (refunding of PPF) were used to compensate for categories 1 and 2 (civil works and equipment) which were overdrawn by US \$ 3.9 and 1.9 million, respectively.

Financing

1.21 One of the main features of this project was to finance urgent works by existing IDA credits, which were amended accordingly. In addition to the IDA Credit 1526-0-MAG of US \$ 15.0 million, three on-going projects contributed funds towards certain urgent rehabilitation needs in their respective sectors: (a) the Second Education Project (Credit 663-MAG) had a remaining balance of US \$ 700,000 after completion of the project, which was used for emergency school repairs; (b) US \$ 2.0 million from the Water and Sanitation Project (Credit 1002-MAG) was used for rehabilitation of JIRAMA's facilities, and for the urban and drainage study of Mahajanga; and (c) the Sixth Highway Project (Credits 1391-MAG and SF4-MAG) contributed for an amount of US \$ 0.5 million towards urgent works on RN4 and reconstruction of the Amboromalandy Dike.

1.22 Following Cyclone Honorinina, in addition to the IDA Credit 1526-1-MAG, the Third Railways Project (Credit 1694-MAG), approved by the Board on May 8, 1986, included US \$ 1.0 million for the rehabilitation of the breakwater of the Toamasina Port. Finally, only SDR 549,321.38 was used, entirely for studies and supervision of the works.

1.23 At the time of the appraisal of the first cyclone project, in April 1984, the OPEC Fund manifested its interest in participating to the reconstruction effort, particularly for the port component. A loan of US \$ 2.2 million was approved by the OPEC Board in December 1984 and signed on December 21, 1984. In a telex of December 7, 1984, OPEC requested that the administration of their loan be taken up by IDA, and wished to note, however, that disbursements on their loan could not commence until arrears due to the Fund were settled. It was proposed to allocate the OPEC funds to the ports of Mahajanga and Antsiranana, and to the Antsiranana airport. An agreement between IDA and the Fund was signed in January 1985, and the OPEC Fund Loan

No.367P was declared effective on May 20, 1985. OPEC informed IDA by telex of May 22, 1985, and specified again that "no disbursements would be made from said loan pending settlement of issue of arrears on Fund's other loans to Madagascar". Since no disbursement authorization was given by OPEC, this loan was never utilized.

F. Project Results

Project Objectives

1.24 Overall, the project was successful in meeting its principal objectives of: (a) rehabilitating infrastructure damaged by Cyclones Kamisy and Honorinina; (b) establishing a permanent institution (CNC) to coordinate reconstruction efforts; and (c) developing construction standards to minimize the potential damage from natural disasters in the future.

Physical Results

1.25 The physical targets of the project were achieved substantially as planned and even beyond. At the end of the project, the Bank extended its financing to the resurfacing of the Toamasina roads, not initially included in the project but deeply needed.

Institutional Performance

1.26 The success of the project is mainly due to the National Coordination Committee (CNC), required by the appraisal mission and established as early as July 1984. The project start up was greatly helped by two consultants who defined clearly the procedures and responsibilities of the various agencies involved and prepared an efficient control system.

1.27 As requested by the Bank, CNC was under the responsibility of the Finance Minister. Nevertheless, for lack of available space in the Finance Ministry, CNC was located in the Ministry of Public Works (MTP), which was by and large the principal executing agency (for a total cost of US \$ 24.0 million, or 54% of the total project cost). From the beginning, MTP tried to take over the management of the project, and the Bank had to resist continuously this trend which would have jeopardized the institutional arrangements, since the other ministries would accept coordination from the Finance ministry but not from MTP. In the minutes of a MTP-CNC meeting of January 2, 1985, it was stated that the consultants of CNC would be the advisors to the MTP Minister, and that CNC would not be authorized to visit the works. This was dropped after a strong negative reaction from the Bank. In February 1985, MTP proposed to reinforce CNC by the recruitment of a local management specialist, and the Bank agreed. On November 6, 1985, the Bank received a telex from MTP proposing to terminate the contracts of the two foreign experts of CNC, and to keep 1e local management specialist until the closing date. The Bank reacted strongly and insisted on the need to have at least one foreign expert until project completion, which was eventually agreed.

Financial Performance

1.28 The project accounts were regularly audited by an external auditor, and the reports were received (with some delay) by the Bank. There was some discussion on the presentation of the accounts, because CNC prepared the accounts in FMg, in US \$ and in SDR. Nevertheless, the auditor never raised any important problem.

G. Project Sustainability

1.29 The project has had significant benefits in implementing new institutional and financial arrangements for efficient reconstruction after natural disasters. CNC was able to cope with Cyclone Honorininina in 1986, with the help of IDA, and with Cyclone Calasanjy in 1989. Permanent staff of CNC is paid by the Ministry of Finance, and they have been able to recruit consultants when necessary, particularly the control and supervision consulting firm, who helped CNC for the public building component of the project. CNC has however been much less active with the last two cyclones (Alibera in 1990 and Cynthia in 1991), which is casting some doubt on its sustainability.

H. Bank Performance

1.30 IDA supervision was relatively continuous, as no change in task manager occurred during the life of the project. Supervision was also intensive since, during the implementation period, a total of fourteen supervision missions visited Madagascar in five years. Ten supervision mission were shared with other projects: Water and Sanitation Project, then Tana Plain Project. The number of staff-weeks spent on this project, by task, is given below:

<u>FY</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>Total</u>
LOP	1.5	6.5	0.8	1.2				10.0
LENP	5.8							5.8
LENA	9.4	10.4	5.6					25.4
LENN		4.8		1.0				5.8
PAD		3.2		0.1				3.3
SPN		20.5	14.4	11.1	9.8	2.8	2.3	60.9
<u>TOTAL</u>	<u>16.7</u>	<u>45.4</u>	<u>20.8</u>	<u>13.4</u>	<u>9.8</u>	<u>2.8</u>	<u>2.3</u>	<u>111.2</u>

1.31 This represents a total of 111.2 staff-weeks for the whole cycle of this twofold project. The detail of the missions is given in Part III, sect.6.

1.32 IDA performance has been good. The best criterion is the elapsed time between appraisal and Board presentation: five months and 25 days for the first credit and three months and 8 days for the second one. The project was well appraised and supervised, with a good coordination between the Power, Transportation and Urban and Water Supply Divisions.

I. Borrower Performance

1.33 On both the technical and financial sides, CNC's performance was excellent: the bidding process and bid evaluation reports were prepared on time, without any procurement problems, and within the appraisal cost estimates. The only exception was the award of an important contract to a contractor without sufficient experience (para.5.04). Payment requests were submitted on time to the Treasury, and the payments to the contractors were generally done in a reasonable period of time.

1.34 Quarterly reports were submitted by CNC to IDA in a timely manner. An independant auditor was retained by CNC for its own accounts. Audited accounts were prepared regularly through March 1990. Delays occurred at the beginning, but generally the audit reports were received within nine months after the end of the fiscal year, instead of six months as required by the Credit Agreement (section 4.01.b).

1.35 CNC's contribution to the PCR consists of reports on the physical components of the project, given in Part II, and financial data, which have been used for Part III.

J. Project Relationship

1.36 IDA relationship with CNC on the project has been very good. The relationship with the Government was disturbed at the beginning by the efforts of MTP to take over responsibilities of CNC. Relationships between the Borrower and the contractors and consultants were also very good, with the exception of the foreign consultant of CNC (see para.6.04).

K. Consulting Services

1.37 The success of the construction component, carried out on a timely and satisfactory manner, within the framework of the appraisal cost estimates, could not have been attained without the quality of consultant inputs that were received during the project appraisal and implementation periods.

L. Project Documentation and Data

1.38 Original documentation for the project was adequate and appropriate. The President's Report of the project provided a useful framework for both IDA and CNC for review of project implementation.

PROJECT COMPLETION REPORT

DEMOCRATIC REPUBLIC OF MADAGASCAR
CYCLONE REHABILITATION PROJECT
(CREDIT 1526-0-MAG)
AND
SUPPLEMENTAL CREDIT
(CREDIT 1526-1-MAG)

PART II: A. LETTER AND COMMENTS FROM GOVERNMENT ON PARTS I AND III

DEMOCRATIC REPUBLIC OF MADAGASCAR

MINISTRY OF FINANCE AND BUDGET

Antananarivo, June 17, 1991

GENERAL SECRETARIAT

DIRECTORATE GENERAL OF EXPENDITURE
AND PUBLIC INVESTMENT

THE MINISTER OF FINANCE AND BUDGET

NATIONAL COORDINATING COMMITTEE
FOR CYCLONE RELIEF

to

P.O. BOX 5123

Mr. Marc BLANC
Chief, Infrastructure Operations Div.
South Central and Indian Ocean Dept.
Africa Region
THE WORLD BANK
WASHINGTON, DC 20433
U.S.A.

Ref.: 140/MFB/SG/DGDI/CNC.

Subject: Cyclone Rehabilitation Project
Credit 1526-MAG
Project Completion Report

Dear Mr. Blanc:

You have asked me to provide information for Part II of the Project Completion Report (PCR) prepared by the Bank. In the same communication, you indicated that the completion report prepared by the Permanent Secretariat of the National Coordinating Committee (CNC) in June 1990 could, with some additions, form the basis for the aforesaid Part II.

I am of the opinion that the Borrower's views have been well represented in the CNC report and correspond to those of the Bank as set forth in explicit detail in Part I of its PCR.

In light of the foregoing, I have the honor to request you to prepare Part II of the PCR from the basic information presented by CNC in its report and to draw this up in whatever format you deem most appropriate.

Further to the CNC report, I take the liberty of enclosing a brief memorandum of comments that could be inserted in Part II of the Bank's PCR.

Yours, etc.,

/s/ Léon M. Rajaobelina

MEMORANDUM

of additional comments on
the evaluation of Project 1526-MAG
"Cyclone Rehabilitation"

As an emergency project, 1526-MAG was a convincing achievement having regard to the time constraints to which its implementation was subject.

The Borrower shares the Bank's view of the excellent results achieved, reflecting as they did the good relationship between the parties.

The operation was successful overall, despite the problems that it encountered. It was not an easy operation: slippages and shortcomings were experienced, such as the difficulties small contractors faced in controlling their costs, despite the establishment of a system of prefinancing by the pilot companies. These shortcomings were at the root of the problem referred to in section 5.04 of Part I.

It should also be noted that a number of modifications affecting the final eligibility of works were ordered during implementation of the project resulting in uncertainties at the worksites.

As a consequence, CNC chose not to cancel contracts, considering it more useful to complete works even though delays could no longer be made up.

To remedy these shortcomings, an adjustment in conditions would be desirable, particularly as regards contract awards, so that the lowest bidder is not automatically selected (the source of problems as noted).

The credit agreements also need to be revised in order to ensure that procedures take account of the fact that the cyclone rehabilitation project is an emergency operation.

PROJECT COMPLETION REPORT

DEMOCRATIC REPUBLIC OF MADAGASCAR
CYCLONE REHABILITATION PROJECT
(CREDIT 1526-0-MAG)
AND
SUPPLEMENTAL CREDIT
(CREDIT 1526-1-MAG)

PART II: B. PROJECT REVIEW FROM BORROWER'S PERSPECTIVE

I. INTRODUCTION

The damage caused by cyclone Kamisy was so extensive that the Democratic Republic of Madagascar was obliged to ask for World Bank assistance for the reconstruction and rehabilitation of economic and social infrastructure. The Bank quickly responded to this appeal and decided to assist the rehabilitation process in the areas most seriously affected, especially Antsiranana and Mahajanga.

The necessary structural and organizational arrangements were made in conjunction with a Bank mission, with a view to preparing and implementing a quantified rehabilitation program. This program was financed by Credit 1526-0-MAG in the amount of SDR 14,800,000, the Credit Agreement being signed on December 6, 1984.

Although the first of its kind, the project got under way smoothly. Implementation was at an advanced stage when the cyclone Honorinina hit the eastern part of Madagascar on March 15, 1986. It devastated the Toamasina region, damaging key infrastructures and prejudicing the economic prospects for 1986. As a result it became necessary to revise the application area of the Kamisy project and related financing needs, especially in foreign exchange.

The revised rehabilitation program required a level of imports of goods and equipment that was beyond Madagascar's available foreign payments capacity. Consequently, a request for emergency assistance was addressed to foreign donors, to which the World Bank responded. The request from the Government to IDA was approved by the Bank's Board in the form of an additional credit of SDR 8,800,000, formalized by an Amending Agreement to the initial Credit Agreement. This additional contribution, in the shape of Credit 1526-1-MAG, raised the overall amount of Bank resources made available for cyclone rehabilitation to SDR 23,500,000. This substantial sum was to finance a program in various sectors and its management led to the establishment of a National Coordinating Committee (CNC) to oversee the rehabilitation work.

In addition to its coordinating role, CNC utilized technical assistance to identify anti-cyclone standards designed to prevent or at least alleviate the destructive impact of such storms. In brief, project preparation and execution was governed by the objectives being pursued.

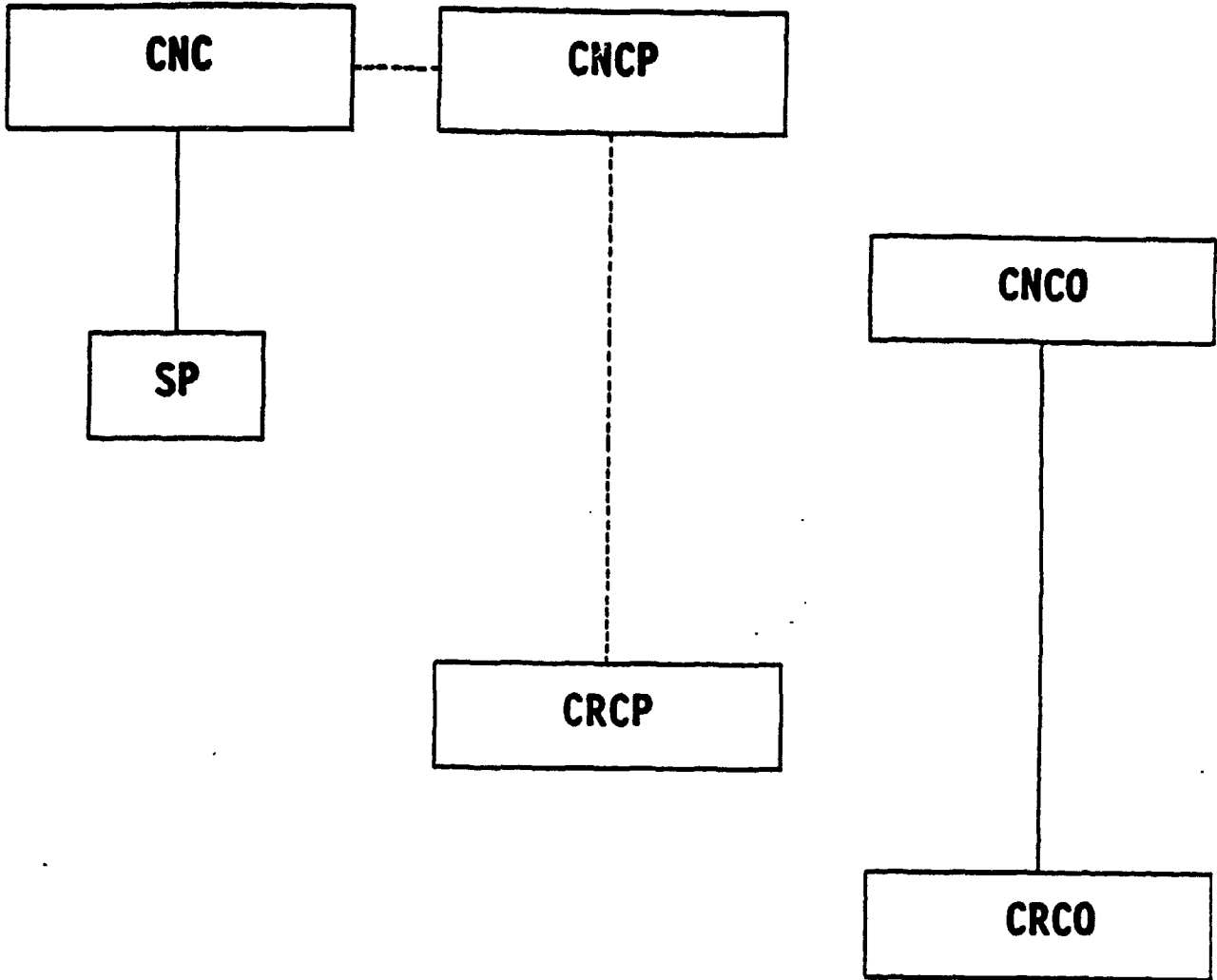
1. Project Preparation and Definition

The project was planned in light of clearly identified objective, namely:

- rehabilitate physical and economic infrastructure in the regions damaged by the cyclones Kamisy and Honorinina;
- rationalize institutional arrangements so as to ensure effective coordination of the program to be implemented;
- define the actions required to minimize the risk of damage when natural catastrophes strike vulnerable regions.

Given the urgent nature of the work to be performed, the structure of the project was governed by the need for coordination and rapid action. Hence an agency responsible for coordinating and supervising program implementation was established at the suggestion of the World Bank. From the start this was a centralized but relatively flexible organization that evolved over time to become the current CNC, which meshes with regional committees in accordance with Decree No. 84,443 of December 14, 1984 concerning the establishment and functions of the CNC, whose organization chart and functional structure are shown in the tables on pages 4 and 5.

Organization Chart



Key:

- Hierarchical link
- - - Functional link

Acronyms:

- CNC: *Comité National de Coordination* (National Coordinating Committee)
- CNCP: *Comité National de Coordination Plénier* (Plenier National Coordinating Committee)
- CNCC: *Comité National de Coordination Opérationnel* (National Coordinating Committee for Operations)
- SP: *Secrétariat Permanent* (Permanent Secretariat)
- CRCP: *Comité Régional de Coordination Plénier* (Plenier Regional Coordinating Committee)
- CRCO: *Comité Régional de Coordination Opérationnel* (Regional Coordinating Committee for Operations)

Synoptic Chart of the Structural and Functional Organization of CNC

Functions Structures	Participations* (make-up)	Actions (functions)
CNCP	<ul style="list-style-type: none"> . Ministry of Finance and Budget . Ministerial Departments of which the ex DGP . BCRM . JIRAMA . Commercial Banks + SP 	<ul style="list-style-type: none"> Damage appraisal Definition of priorities Exploration and coordination of financing Political definition and program Monitoring progress of operations Identification of blockages
CNCO	<ul style="list-style-type: none"> . Chairman of CNCP . CNS Representative . The DGP, now MPE . MTP Representative . MPARA Representative + SP 	<ul style="list-style-type: none"> Execution of CNCP program Solutions to financial/legal/technical problems Contract awards Preparation of financing documents Determining conditions for allocating grants and assistance Works supervision
CRCP	<ul style="list-style-type: none"> . CE/Faritany members . Representatives of Ministerial Departments + OE . SG/Faritany 	<ul style="list-style-type: none"> Cooperation with CNCP at regional level
CRCO	<ul style="list-style-type: none"> . Faritany Representative . Head of logistical ?Permanent Secretariat . " " TP 	<ul style="list-style-type: none"> Cooperation with CNCO at regional level

As noted above, it was CNC's task to manage the funds made available through Credits 1526-0-MAG and 1526-1-MAG.

* T.N. Not all the abbreviations used here are clear to those unfamiliar with the project (i.e. neither fully legible nor explained). Here as elsewhere in the tables in this report a very compressed approach is used.

1.1 Credit 1526-0-MAG

As per Schedule 1 of the Credit Agreement, the funds allocated to each category were as follows:

<u>Category</u>	<u>Amount</u> <u>(in SDRs)</u>
1. Works	3,900,000
2. Goods	1,900,000
3. Consultants	900,000
4. Housing credits under part G of the project	1,900,000
5. Initial deposit in Special Account to prefinance works, goods or services under categories 1 through 4 above	2,900,000
6. Refunding of Project Preparation Advance	900,000
7. Unallocated	<u>2,400,000</u>
Total	14,800,000

These categories cover the following components:

<u>Component</u>	<u>Designation</u>
A	Ports
B	Airports
C	Highways
D	Buildings
E	FIFABE
G	Housing
H	Consultants
J	JIRAMA

1.2 Credit 1526-1-MAG

The Amending Agreement to the initial Credit Agreement resulted in an additional Credit of SDR 8,800,000, allocated as follows:

<u>Category</u>	<u>Amount (in SDRs)</u>
(1)(a) Works other than those referred to under category (1)(b) and (1)(c) below	3,830,000
(1)(b) Works under part A (iii) of the Project (Ports)	4,020,000
(1)(c) Works under part B (v) of the Project (ASECNA)	48,000
(2)(a) Goods	50,000
(2)(b) Navigation aid equipment	140,000
(3) Consultants	<u>712,000</u>
Total	8,800,000

This covered the following components:

<u>Category</u>	<u>Designation</u>
A	Ports
B	ASECNA
C	Highways
D	Buildings
G	Consultants
H	JIRAMA

For both 1526-0-MAG and 1526-1-MAG, the details of the work executed under each component is identified in the documents annexed to the Amending Agreement to the Credit Agreement; it is therefore unnecessary to repeat them in this report, which it was agreed should be a summary document. However, details on each part of the project are given in the annex to meet possible information requirements.

Thus defined and organized, the programs were executed within the same institutional framework but at different periods extending over two and a half years, in view of the fact that some components were implemented under the supplementary Credit.

2. Technical Execution of the Project

Both for credit 1526-0-MAG and for 1526-1-MAG the responsible sector institutions were in charge of executing the subsector components of the project, namely: the Ministry of Transport as regards port and airport infrastructures (through SEPT and ASECNA), the Ministry of Public Works as regards highways and public buildings, and the Ministry of Mines and Industry through JIRAMA. Thus, for the works themselves, these agencies were the main contractors while CNC was the implementing authority. To ensure its effectiveness in this capacity CNC had recourse to technical assistance from BCEOM for Credit 1526-0-MAG and from SOCOTEC-MADAGASCAR for Credit 1526-1-MAG, since technical execution of the project required the intervention of specialists.

2.1 Technical execution

In technical terms it was not enough merely to carry out repairs for their own sake. It was also necessary to adopt techniques designed to provide adequate protection of infrastructures against natural disasters. It was recognized that, to achieve this aim, particularly where housing was concerned, structures needed to be reinforced using anti-cyclone standards in the zones subject to serious risk. Apart from this technical criterion, time was the determining factor in the award and execution of contracts.

2.1.1 Contract award

Since the rehabilitation was designed to restore normal social and economic activities as soon as possible in the affected areas, the need for quick action governed the choice and execution of the activities to be undertaken. It was therefore necessary to waive certain regulations, which prompted Decree No. 84,236 of July 18, 1984 setting aside certain provisions of Decree No. 70,089 of January 28, 1980 governing public contracts, specifically as regards contracts awarded in the aftermath of natural disasters. Contracts were then awarded on this basis. As regards execution, contracts were entrusted directly to designated companies, inspection and oversight being performed either directly by the organizations responsible for each component or through the consultants providing technical assistance to CNC.

2.1.2 Contract execution

Project effectiveness depended to a great extent on the proper execution of services (goods and works). To achieve this, particular importance was attached to monitoring costs, execution periods and the quality of operations, which tasks were made the responsibility of professionals such as BCEOM and SOCOTEC-MADAGASCAR. This recourse to experts was all the more justified insofar as the geographic dispersion of work sites required a considerable level of organization.

The tables on pages 9, 10 and 11 show services provided under Credits 1526-0-MAG and 1526-1-MAG respectively. An analysis of these tables reveals cases both of noteworthy performance and also some shortcomings. Among the former, mention should be made of the excellent performance by companies such as COLAS. Clearly, situations occurred in which the final costs exceeded the initial contract amounts, either because they involved additional works or because of a fall in the exchange rate (for external payments).

While a number of companies honorably fulfilled their commitments, others demonstrated shortcomings, not to say incompetence. Clearly, one or more factors beyond the firms' control may have contributed to this situation (for example, supply difficulties resulting from an unfavorable economic situation). But ought not a company's effectiveness to be judged by its ability to overcome difficulties? However, this report ought not to be a subjective document; in order to remain objective it will focus on overall results.

2.1.3 Actions and results

Despite the difficulties encountered since the project became effective, it is quite proper, now that it is completed, to say that the results have been positive, thanks to the determination shown by the various parties involved, viz. the World Bank, CNC and its technical assistants, and the companies. It should be recognized that the joint efforts of these institutions and agents made the project a success, and an overview of these efforts is appropriate here.

The World Bank sent more than 12 missions to Madagascar in the course of the project. Mission personnel did not stint their time in visiting work sites with the Madagascar officials responsible for the project. Each mission provided an occasion for briefings and consultations with a view to ensuring the smooth progress of the project. As a result, difficulties were either alleviated or resolved and errors corrected, since mistakes were indeed made as a result of the imperative need for quick action. These difficulties and errors did not always make it easy to maintain the project execution schedule. The reports prepared as aide-mémoires at the conclusion of each Bank mission provide details of the situation at that time and the measures taken or proposed. This Bank supervision carefully complemented the works monitoring and oversight operations carried out initially by BCEOM and subsequently by SOCOTEC.

These monitoring and supervision tasks were energetically performed. In addition to their conventional monitoring, those concerned also had to ensure that the companies involved mastered anti-cyclone techniques. In addition, SOCOTEC-MADAGASCAR issued a booklet of construction standards applicable to buildings erected in areas of high cyclone risk. This document, approved by the Ministry of Housing, was an integral part of the TBM and referred to the contracts to be awarded by the Madagascar authorities. The booklet was especially invaluable to medium-sized firms, since a company of the dimensions of COLAS, headed by experts, had no difficulty in mastering all the techniques involved.

Given the spirit in which works monitoring and supervision was carried out, execution periods were more or less observed, except for the works undertaken by COGENAL. As a result of the considerable amount of work allocated to it, this firm experienced procurement problems because of failures by suppliers of wood; only COGENAL's solid financial position enabled these problems to be overcome. COGENAL was not the only company to be let down by suppliers; smaller companies experienced these difficulties also.

Nevertheless, the special case of COGENAL aside, the works were completed and accepted before the project completion date, namely December 31 1989. The acceptance process was not without its problems, however, especially where housing was concerned. Frequently these works could not be accepted on the date proposed by the companies because of defects in subsidiary works or the failure to observe professional standards. The major works, on the other hand, were correctly and swiftly completed.

This overview of the technical execution of the project is followed by a section on its financial execution.

3. Financial Execution of the Project

In accordance with the provisions of the Credit Agreement, the prompt availability of funds for project operations was ensured through the utilization of a Special Account (in US\$) and a Project Advance Account (in local currency), both opened with the Central Bank of Madagascar. The Special Account was replenished using the proceeds of the Credit, while the Project Advance Account was replenished by local counterpart funds.

Transactions in these accounts took place on the instructions of the Madagascar Treasury. CNC maintained the accounts relating to project resources and expenditures on the basis of bank advices sent to it more or less regularly. Disbursements were made on presentation of payment orders, the sequence of procedures being schematically illustrated in the tables on pp. 15 and 16.

CNC prepared monthly reports on the financial situation of the project which were communicated to all those concerned.

On completion of the project a detailed financial statement, broken down by components (including those that were the subject of subsidiary or

special agreements), was prepared and circulated. It was felt useful in this report to supplement this information by calculating the deviation between projections and outcomes.

The results of these calculations are given in the tables on p. 18. They show that there was an overrun of SDR 92,909.24 in relation to Credit 1526-0-MAG, while Credit 1526-1-MAG shows a balance of SDR 509,102.19 [sic: error for SDR 590,102.19]; the consolidation of these two figures gives a balance of SDR 497,192.95.

3.1 Origin of the balance

This balance is principally the result of the conversion method used by CNC, involving the use for its payment applications of the same exchange rate as that utilized by the World Bank for the most recent replenishment. Consequently, the balance can only have a relative value in the eyes of the Bank, which uses the spot exchange rate for all its operations. The audit report of June 8, 1990 describes these two different methods, which can only lead to ... [illegible] between CNC's figures and those of the Bank. However, the audit arrived at the same figure for the balance as did CNC, noting that the detailed breakdown of expenditure by component and category properly and accurately reflects the expenditures made by CNC.

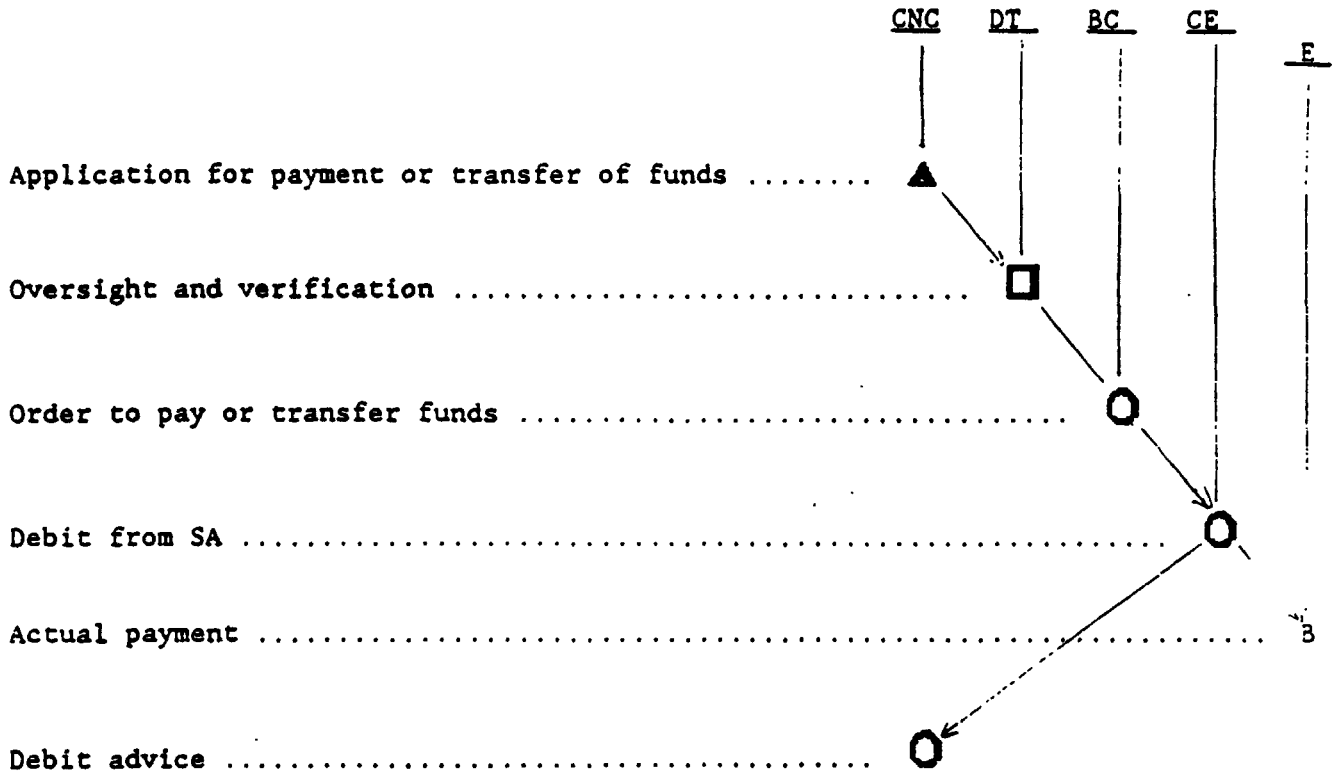
This description of project preparation and execution enables the following conclusions to be drawn.

CONTRACT	AWARDED TO	AMOUNT	AMENDMENT NO. 1	AMENDMENT NO. 2	AMENDMENT NO. 3	CONTRACT PERIOD (months)	APPROVAL DATE	DATE	PROVISIONAL ACCEPTANCE DATE	FINAL ACCEPTANCE DATE	BRIEF DESCRIPTION
	CHAD CHOR COLAS ETB RELINCO ETRU SIF BACHT BCEOM FIN COGENAL SEPT HOKAKELY MERILANAINA ETB/ETRU COMARCO ETB ETB/ETRU FRIDA GISMAN DAMENS COLAS FRESOR	16,805,000.00 30,000,000.00 111,121,372.00 23,989,402.00 4,705,000.00 261,401,011.00 8,166,495.00 71,373,657.00 5,240,320.00 14,560,744.00 27,000,000.00 63,253,136.00 50,859,962.00 53,290,625.00 9,240,000.00 19,805,780.00 19,751,407.00 88,310,557.00 185,000,000.00 408,637,106.00 29,275,165.00 44,712,361.00	5,000,000.00 27,227,011.00 5,091,096.00 267,819,011.00 102,532,907.00 24,585,907.00	372,698,051.00 108,788,907.00		12 4,5 2 23 1 27 1 5 26 4 3 5 21 days 2 10 9 16 4 ZERO ZERO	11/26/84 02/27/85 05/20/85 04/24/85 08/06/86 08/06/86 04/08/87 10/18/84 11/23/84 12/07/84 07/17/84 01/24/85 12/13/84 11/02/84	05/31/85 03/30/85 02/27/85 03/04/85 01/21/86 05/10/85 12/03/84 05/14/85 06/10/85 12/07/84 09/10/86 09/02/86 05/08/87 11/05/84 12/15/84 09/28/85 02/07/85	07/31/85 06/12/85 01/26/87 04/05/86 01/26/87 05/06/85 07/09/85 10/14/85	09/03/86 06/08/88 06/09/86	FLOATING UNITS TECHNICAL ASSISTANCE FOR PORT EQUIPMENT WHARF & PORT CAPTAIN'S ACCOMMODATION SUPPLY & INSTALLATION OF CABINETS WHARVES: COSTE, ORESINI, BARRIBAND EMERGENCY BREAKWATER SLOPE PLAN SOUNDING, MAROVAY PORT STUDIES/INSPECTION, MANAJANGA & ANTISIRAHANA PORTS HYDROGRAPHIC SURVEY, MANAJANGA ROOF OF PORT CAPTAIN'S ACCOMMODATION SEPT COMMITTEE ANALAYA/MOST LAVA LIGHTHOUSES LIGHTHOUSES/BUILDINGS, AMBATOLAMA & ILE VERT KATSEPT LIGHTHOUSE UNDERWATER INSPECTION MULLEIN WHARF PORT CAPTAIN'S OFFICE, MANAJANGA ANTISIRAHANA LIGHTHOUSES/BUILDINGS NAVIGATIONAL AIDS EQUIPMENT (SUPPLY 7/CABIN) REIMBURSEMENT FOR WORK ON BUILDINGS.
	COLAS ROGER EGC ROGER COLAS ASECMA	311,997,630.00 43,912,090.00 73,794,701.00 37,391,552.00 20,928,500.00 984,112,394.00	83,254,685.00 43,912,090.00			5 3 3 3 - -	02/13/85 07/08/85 02/13/85 07/08/85 02/08/87	02/19/85 01/22/85 02/19/85 07/22/85 02/02/85	07/19/85 08/04/86 08/08/85 04/18/86	07/25/86 07/12/86 09/30/86	REPAIRS TO BUILDINGS/WHARVES CIVIL ENGINEERING WORKS, MANAJANGA REPAIRS TO BUILDINGS/WHARVES CIVIL ENGINEERING WORKS AIRPORT WORKS SUNDRY SUPPLIES/WORKS
	GARROGI COLAS BCEOM COLAS LHTPB	1,414,449,360.00 1,367,997,185.00 68,155,475.00 1,413,803,717.00 39,775,165.00	2,752,913,547.00			31 13 11 14 ZERO	05/26/83 03/30/84 12/13/84 12/19/85 06/30/84	05/31/83 03/31/84 12/13/84 12/26/85	01/23/86 12/08/86	01/27/87 12/09/87	REPAIRS TO BNC, MAROMANDIA STRENGTHENING/RECONSTRUCTION BNC-BN6 EMBANKMENT INSPECTION BNC DJANGA-AMBAJAJA ROAD HIGHWAY GEOTECHNICS
	SEINAD PROFILAGE SOCOTED EGC COLAS TATSIRAHANA COGENAL IGNY EM TATSIRAHANA	435,781,000.00 90,000,000.00 18,345,260.00 6,203,543.00 356,694,614.00 235,827,648.00 385,499,861.00 98,033,005.00 25,045,144.00 304,635,702.00	364,426,076.00 112,052,190.00 359,034,621.00			26 ZERO 15 3 10 10 5 4 1 5	11/03/84 04/30/85	12/27/84 05/13/85 10/18/84 05/13/85 07/15/85 03/13/86 04/05/86 12/21/85 05/15/85 08/11/86	07/15/85 03/13/86 04/05/86 12/21/85 05/15/85 08/11/86		TECHNICAL ASSISTANCE, CELOP NIP PURCHASE OF SHEET METAL TECHNICAL ASSISTANCE NIP SCHOOL BUILDINGS MANAJANGA SCHOOL BUILDINGS AND HOSPITALS PUBLIC BUILDINGS BUILDING WORKS, MANAJANGA DORMITORY, TECHNICAL SCHOOL & CIV. ENG. PUBLIC BUILDINGS SCHOOL BUILDINGS

CONTRACT	AWARDED TO	AMOUNT	AMENDMENT NO. 1	AMENDMENT NO. 2	AMENDMENT NO. 3	CONTRACT PERIOD (months)	APPROVAL DATE	DATE	PROVISIONAL ACCEPTANCE DATE	FINAL ACCEPTANCE DATE	BRIEF DESCRIPTION
	BCEON	692,484,460.00	711,683,012.00			26	11/23/86	12/24/86			TECH. ASST. TO CMC
	COLAS/GOGEA	1,214,878,762.00				5	08/03/89				REPAIRS TO PIER 8 ROADS/ACCESSES
	INFRANAD	50,251,550.00	109,458,324.00			13	10/04/88	10/13/88			TOMASINA STREET CONTROLS
	COLAS	295,047,452.00	710,862,452.00			9	10/04/88	11/30/88	08/07/89		TOMASINA STREET REHABILITATION
	COLAS	5,447,384,055.00	5,629,029,197.00	6,695,372,447.00		35.5	02/12/88	02/12/88			REPAIRS TO TOMASINA PORT DIKE
	EIPISE MARIA	31,476,937.00	59,025,461.00			8	07/14/87	07/21/87	04/27/88		TOMASINA AIRPORT
	COLAS	798,018,054.00				44	09/26/85	10/01/85	12/09/87	12/05/88	RESTORATION OF INTERMEDIATE ZONES, Bm6 (MARCHANDIA, DJANGCA ANBALIA)
	COGENAL	568,265,516.00	3,264,821,354.00			6	06/02/87	06/06/87	05/02/90		BUILDING REPAIRS TOMASINA
	SIF BACNT	41,439,100.00				1	02/05/88			02/18/88	RECONNAISSANCE SOUNDINGS
	CNCIPC	483,057,488.00	547,744,988.00			5.5	09/02/88	09/16/88	02/08/89		RECONSTRUCTION OF ANALAMALOTRA BRIDGE
	INFRANAD	29,813,505.00				6.5	09/16/88	09/19/88			MONITORING ANALAMALOTRA BRIDGE
	SOCOTEC	275,836,240.00	361,699,840.00	457,092,340.00	522,451,440.00	31	10/30/86	12/01/86			ASSISTANCE TO CYCLONE HOUSING DAMAGE OFFICE
	RAZAFINDREHE	88,568,400.00	17,713,680.00			6	04/27/87	05/22/87	03/11/88	08/01/89	SUPPLY OF CONSTRUCTION TIMBER
	SEMA-OFAMA	50,825,408.00	16,941,800.00			6	04/27/87	05/22/87			SUPPLY OF CONSTRUCTION TIMBER
	MANARONRAINIBE	139,393,800.00	17,713,680.00			6	04/27/87	05/22/87			SUPPLY OF CONSTRUCTION TIMBER
	MATINON	139,393,800.00	96,420,706.00			6	04/27/87	05/22/87	06/09/88		SUPPLY OF CONSTRUCTION TIMBER
	COLAS	499,349,274.00	628,617,968.00			7.5	05/18/87	06/03/87	09/23/88	12/04/89	SAFETY AND REPAIR WORK ON MARITIME/ROAD STRUCTURES/BUILDINGS
	ANDRIANTAVY D. S.T.E.	341,534,451.00	275,649,293.00			5	06/02/87	06/05/87	08/30/89	04/02/90	BUILDING REPAIRS
	RAZAFINDREHE	603,739,540.00	627,331,326.00			7	06/02/87	06/05/87	08/04/89		BUILDING REPAIRS
	RAMANDRINIHASO	51,405,900.00						11/03/87			SUPPLY OF CONSTRUCTION TIMBER
	TANARASOANDRO	4,542,500.00						04/14/89			1988 AUDIT
	FOFIPA	10,071,899.00				1		06/22/88	09/22/88		SUPPLY OF CONSTRUCTION TIMBER
	RATSITRADRAIBE	2,444,900.00				1		06/27/88			ANTI-STORM STANDARDS
	FOFIPA	11,057,332.00				1		03/24/89	05/18/89		SUPPLY OF CONSTRUCTION TIMBER
	RAMANDRINIHASO	10,838,750.00						05/28/89			ANTI-STORM STANDARDS
		4,312,500.00					03/08/88	03/09/88			1987 AUDIT
	LUCILE	9,436,272.00						12/18/88	12/13/88		SUPPLY OF CONSTRUCTION TIMBER
	SHIP	542,675,380.00				4		01/09/87	12/15/87		TEMPORARY REPAIRS TO TOMASINA PORT DIKE
	SOCIMEX	126,566,226.00						02/23/89			SUPPLIES
	COSSAMEX	157,072,692.00						10/23/89			SUPPLIES
	TRESOR	76,035,399.00									REGULARIZATION 9681-9670
	ASECHA			97,400,000.00				09/23/88		11/25/88	OPERATION 0402/083/03/10A/MA (CIVIL WORKS AND SUPPLIES)

SPECIAL ACCOUNT (SA)

Diagram of Document Flows:



Symbols:

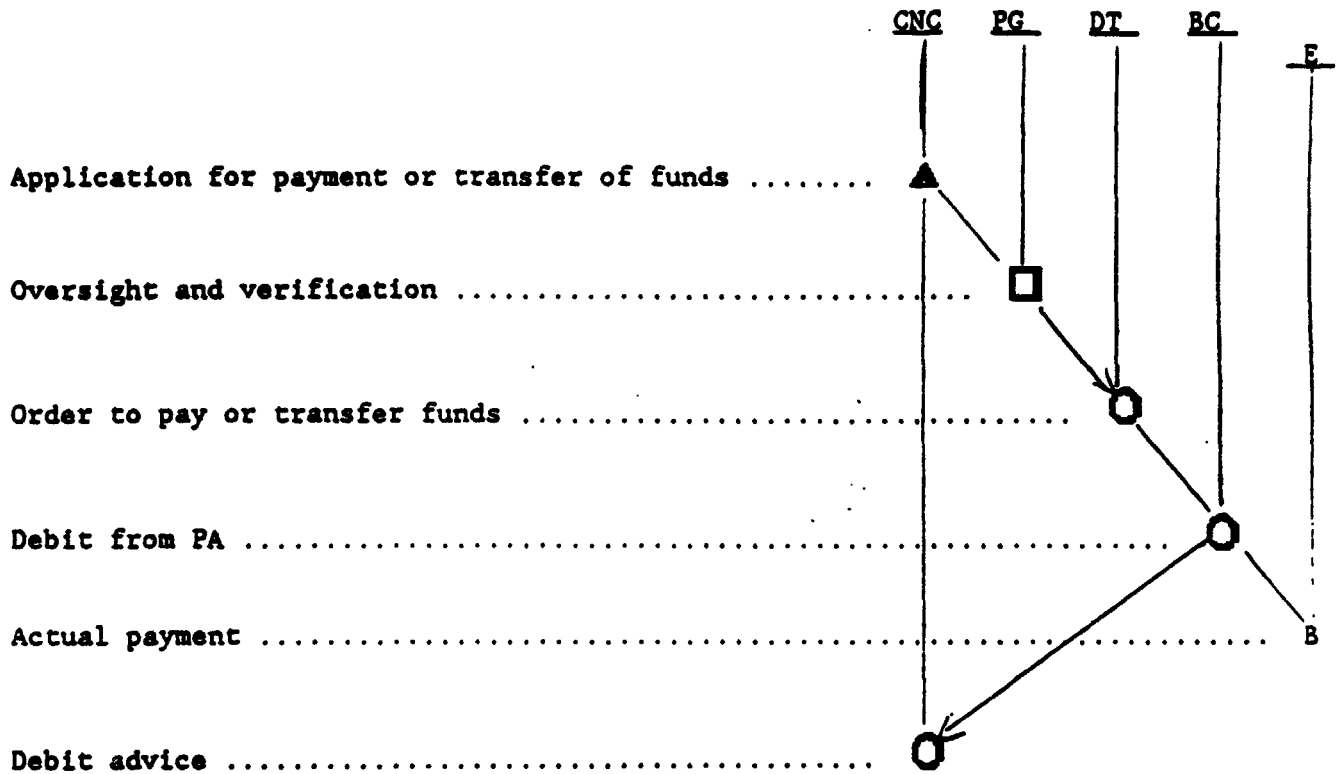
- ▲ forwarding of documents
- oversight
- operation

Abbreviations

- DT: Directorate of the Treasury
- BC: Central Bank
- CE: Foreign correspondent
- E/B: Beneficiary company

PROJECT ACCOUNT (PA)

Diagram of Document Flows:



Symbols:

- ▲ forwarding of documents
- ◻ oversight
- operation

Abbreviations

- PG: Payment Office
- DT: Directorate of the Treasury
- BC: Central Bank
- E/B: Beneficiary company

IDA CREDIT 1526-0-MAG AT 03/30/90

Deviation between Estimated and Actual Costs, by Categories (SDR)

Category	Item	Expenditure		Deviation E - A
		Estimated	Actual	
1	WORKS	3,900,000	7,868,632.52	-3,968,632.52
2	EQUIPMENT	1,900,000	3,793,921.68	-1,893,921.68
3	CONSULTANTS	900,000	962,324.25	-62,324.25
4	HOUSING LOAN	1,900,000	1,742,204.30	157,795.70
5	INITIAL DEPOSIT	2,900,000	0.00	2,900,000.00
6	PPF297	900,000	525,826.49	374,173.51
7	UNALLOCATED	2,400,000	0.00	2,400,000.00
TOTALS		14,800,000	14,892,909.24	-92,909.24

IDA CREDIT 1526-1-MAG AT 03/30/90

Deviation between Estimated and Actual Costs, by Categories (SDR)

Category	Item	Expenditure		Deviation E - A
		Estimated	Actual	
1A	WORKS	3,830,000	3,520,213.99	309,786.01
1B	WORKS	4,020,000	3,601,539.17	418,450.83
1C	CIVIL ENGINEERING ASECNA	48,000	23,055.65	24,944.35
2A	SUPPLIES	50,000	269,529.26	-219,529.26
2B	MATERIAL ASECNA	140,000	100,073.02	39,926.98
3	CONSULTANT	712,000	695,486.72	16,513.28
TOTALS		8,800,000	8,209,897.81	590,102.18

CONCLUSIONS

Notwithstanding its wide geographical scope and the volume of funds allocated to it, the "Cyclone Rehabilitation Project" was effectively carried out within the prescribed period. This was due to the fact that the planning and execution of the project were characterized by a constructive spirit that inspired both institutions and agents in their efforts to achieve the project's aims.

This investment of resources was beneficial in both economic and social terms, given the scope of the work carried out in many sectors of the economy and the significant induced effects. These achievements must be preserved through appropriate post-project measures, since the durability of the rehabilitated infrastructures will depend on the maintenance work performed on them.

The experience of this first project of its kind was rich in useful information and lessons for the future.

ANNEX 1
Description of the Project

Part A: Ports

The main objectives of the Project are to assist the Borrower in: (i) carrying out a physical and economic rehabilitation program for the areas of Madagascar damaged by recent cyclones; (ii) streamlining the institutional arrangements appropriate for the efficient coordination of that program; and (iii) helping develop measures to minimize the potential damage from natural disasters to vulnerable areas of Madagascar. To that end, the Project consists of the following Parts:

Part A: Ports

- (i) Mahajanga: rehabilitation of the Vuilleman and Barriquand wharves, repair of offices, housing and warehouses and replacement or repair of port equipment (navigational aids, launches, tugs and spare parts).
- (ii) Antsiranana: rehabilitation of the old and new wharves, restoration of buildings and housing, and replacement or repair of port equipment (launches, navigational aids, tugs and spare parts).
- (iii) Toamasina: engineering for and repair of the breakwater.

Part B: Airports and Meteorological Stations

- (i) Mahajanga: repair of air terminal, staff residences, hangar, runway markings and runway drainage.
- (ii) Mahajanga: repair or replacement of technical facilities and equipment (including radio beacons, pylons, antennas, 1 receiver, 1 VHF omni range/DME station, 2 power units, and meteorological equipment).
- (iii) Antsiranana: repair of air terminal, technical facilities under construction, hangar quarters, runway markings and runway drainage; replacement or repair of equipment (1 radio station, pylons and antenna, visual landing aids, fire engine, 1 power unit and meteorological equipment).
- (iv) Restoration of Mahajanga and Antsiranana meteorological stations (including repair of technical buildings and quarters) and repair of communication, telex and telephone equipment.
- (v) Toamasina: repair of buildings and replacement of navigation aid equipment.

Part C: Roads

- (i) Reconstruction of Amboromalandy dike, bridge and spillway on RN4.
- (ii) Rehabilitation of the road linking Marovoay to the RN4 (RN8).
- (iii) Repair work on RN5 and RN6 and in Sainte Marie island.

Part D: Public Buildings

- (i) Repair of educational buildings (about 15 schools in Mahajanga and about 15 schools in Antsiranana).
- (ii) Repair of other public buildings, administrative offices and public housing (about 20 buildings in Mahajanga and 16 buildings in Antsiranana).
- (iii) Repair of schools, health facilities and administrative offices in Toamasina and Sainte Marie island.

Part E: Agriculture

- (i) Restoration of the FIFABE fleet by purchasing one tug and two barges.
- (ii) Re-establishment of the FIFABE spare parts stock (spare parts for diggers, pumps and power units).
- (iii) Repair of 15 FIFABE buildings at Marovoay and Mahajanga.

Part F: Housing Credits

Credits to be provided by the Intermediaries to private owners for the repair or rehabilitation of houses damaged by cyclones; such credits to be provided under the terms and conditions set forth in the Annex to this Schedule.

Part G: Studies and Technical Assistance

- (i) Technical assistance to CNC to strengthen its managerial and supervisory capabilities.
- (ii) Technical assistance for supervision of Project execution.

PROJECT COMPLETION REPORT

**DEMOCRATIC REPUBLIC OF MADAGASCAR
CYCLONE REHABILITATION PROJECT
(CREDIT 1526-0-MAG)
AND
SUPPLEMENTAL CREDIT
(CREDIT 1526-1-MAG)**

PART III: STATISTICAL INFORMATION

1. RELATED BANK CREDITS

CREDITS TO URBAN, WATER SUPPLY AND TRANSPORT SECTOR

<u>Credit Title</u>	<u>Purpose</u>	<u>Year of Approval</u>	<u>Status</u>	<u>Comments</u>
Credit 1002-MAG Antananarivo Water and Sanitation	New production facilities, improvements to the water distribution network, drainage and sewerage for the low areas of the city	1980	Completed in 1986	The sanitation component was cancelled due to important delays
Credit 1497-MAG First Urban Project	Improvements of urban services in Antananarivo and Toamasina	1984	Almost completed	
Credit 2117-MAG Antananarivo Plain Development	Flood control, drainage and sanitation in the low areas of the city, privatization of the sewerage and solid waste systems	1990	Just started	Includes sanitation component of Cr.1002-MAG not implemented
Credit 1391-MAG Sixth Highway Project	Road rehabilitation program mainly on RN4 and RN6	1984	Under implementation	Financed works on RN4 and the Amboromalandy dike for the Cyclone
Credit 1694-MAG Third Railway Project		1987	Under implementation	Financed the Toamasina Port for US\$1.0 million
Credit 1752-MAG Port Project	Rehabilitation program of 9 ports	1987	Under implementation	Financed the Toamasina Port for US\$1.0 million
Credit 1905-MAG Seventh Highway Project	Road rehabilitation throughout the country	1988	Under implementation	

2. PROJECT TIMETABLE

<u>Item</u>	<u>Date Planned</u>		<u>Date Revised</u>		<u>Date Actual</u>	
Identification and Appraisal missions					May 1984 April 1986	(a) (b)
Credit Negotiations	September 1984 June 1986	(a) (b)			September 1984 June 1986	(a) (b)
Board Approval	October 30, 1984 August 05, 1986	(a) (b)			October 30, 1984 August 05, 1986	(a) (b)
Credit Signing					December 06, 1984 August 18, 1986	(a) (b)
Credit Effectiveness	January 25, 1985 November 16, 1986	(a) (b)	February 25, 1985 January 19, 1987	(a) (b)	February 25, 1985 December 09, 1986	(a) (b)
Project Completion	December 31, 1986 June 30, 1989	(a, (b)			December 31, 1986 December 31, 1989	(a) (b)
Credit Closing	June 30, 1987 December 31, 1989	(a) (b)	December 31, 1989 December 31, 1989	(a) (b)	December 31, 1989 December 31, 1989	(a) (b)

(a) Credit 1526-0-MAG

(b) Credit 1526-1-MAG

3. CREDIT DISBURSEMENTS

**A. CUMULATIVE ESTIMATED AND ACTUAL DISBURSEMENTS
(US \$ '000)**

	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990
Appraisal Estimate	8,000	4,000	3,000	5,000	4,000	1,000
Actual	4,519	7,907	2,665	6,482	5,505	885
Cumulative Disbursements						
Appraisal Estimate	8,000	12,000	15,000	20,000	24,000	25,000
Actual	4,519	12,426	15,091	21,573	27,078	27,963
Actual as % of Estimate	56.5	103.6	100.6	107.9	112.8	111.9

**B. DISBURSEMENTS BY CATEGORY
(SDR equivalent)**

Category	Amount of the Credit Allocated	Actual Disbursements
(1) <u>Civil Works</u>		
(a) Other than b and c below	7,180,000	10,847,467.40
(b) Toamasina Breakwater	4,380,000	4,273,859.37
(c) Toamasina Airport	90,000	35,044.29
(2) <u>Equipment</u>		
(a) Goods	2,100,000	3,876,427.51
(b) Navigation Aid Equipment	140,000	105,677.10
(3) <u>Consultants</u>	1,430,000	1,541,527.61
(4) <u>Housing Credits</u>	1,900,000	1,720,519.39
(5) <u>Initial Deposit</u>	2,900,000	0.00
(6) <u>Refunding of PPF</u>	526,000	525,826.49
(7) <u>Unallocated</u> difference between historical values of DTS and US \$	2,954,000 0	0.00 673,650.84
TOTAL:	23,600,000	23,600,000.00

C. DISBURSEMENTS BY QUARTER

Period Dates	Disbursements	Cumulative Disbursements	Percent Disbursed	Historical US\$ Equivalent
Credit 1526-0				
01/01/85 - 03/31/85	3,445,484.89	3,445,484.89	23.3	3,384,210.16
04/01/85 - 06/30/85	1,150,394.58	4,595,879.47	31.1	1,135,116.55
07/01/85 - 09/30/85	111,010.55	4,706,890.02	31.8	116,320.19
10/01/85 - 12/31/85	3,662,787.64	8,369,677.66	56.6	3,985,321.34
01/01/86 - 03/31/86	2,627,347.02	10,997,024.68	74.3	3,013,932.87
04/01/86 - 06/30/86	682,376.09	11,679,400.77	78.9	791,847.47
07/01/86 - 09/30/86	0.00	11,679,400.77	78.9	
10/01/86 - 12/31/86	1,882,891.47	13,562,292.24	91.6	2,281,413.73
01/01/87 - 03/31/87	303,543.66	13,865,835.90	93.7	383,539.55
04/01/87 - 06/30/87	0.00	13,865,835.90	93.7	
07/01/87 - 09/30/87	0.00	13,865,835.90	93.7	
10/01/87 - 12/31/87	168,525.68	14,034,361.58	94.8	219,548.23
01/01/88 - 03/31/88	218,267.60	14,252,629.18	96.3	299,919.92
04/01/88 - 06/30/88	364,150.68	14,616,779.86	98.8	503,280.52
07/01/88 - 09/30/88	47,196.34	14,663,976.20	99.1	61,321.73
10/01/88 - 12/31/88	0.00	14,663,976.20	99.1	
01/01/89 - 03/31/89	0.00	14,663,976.20	99.1	
04/01/89 - 06/30/89	0.00	14,663,976.20	99.1	
07/01/89 - 09/30/89	0.00	14,663,976.20	99.1	
10/01/89 - 12/31/89	0.00	14,663,976.20	99.1	
01/01/90 - 03/31/90	0.00	14,663,976.20	99.1	
04/01/90 - 06/30/90	136,023.80	14,800,000.00	100.0	180,108.58
Credit 1526-1				
10/01/86 - 12/31/86	0.00	0.00	0.0	
01/01/87 - 03/31/87	0.00	0.00	0.0	
04/01/87 - 06/30/87	0.00	0.00	0.0	
07/01/87 - 09/30/87	1,441,380.58	1,441,380.58	16.4	1,839,467.37
10/01/87 - 12/31/87	1,884,201.72	3,325,582.30	37.8	2,538,623.07
01/01/88 - 03/31/88	511,632.27	3,837,214.57	43.6	708,805.53
04/01/88 - 06/30/88	272,725.54	4,109,940.11	46.7	372,002.28
07/01/88 - 09/30/88	1,817,726.02	5,927,666.13	67.4	2,358,514.26
10/01/88 - 12/31/88	1,260,105.87	7,187,772.00	81.7	1,677,029.12
01/01/89 - 03/31/89	948,862.29	8,136,634.29	92.5	1,247,343.29
04/01/89 - 06/30/89	127,639.11	8,264,273.40	93.9	160,905.81
07/01/89 - 09/30/89	27,302.81	8,291,576.21	94.2	34,792.79
10/01/89 - 12/31/89	0.00	8,291,576.21	94.2	
01/01/90 - 03/31/90	0.00	8,291,576.21	94.2	
04/01/90 - 06/30/90	508,423.79	8,800,000.00	100.0	670,454.44

4. PROJECT COSTS AND FINANCING

**A. PROJECT COSTS
(US\$'000)**

	Appraisal Estimate		Actual	IDA Part	
	Base Cost	Conting.			Total
(1) Credit 1526-0-MAG					
A. Ports	2,726	523	3,249	2,824	1,973
B. Airports	2,017	387	2,404	3,235	2,600
C. Roads	7,354	1,410	8,764	11,545	6,010
D. Public Buildings	5,152	988	6,140	4,428	2,612
E. FIFABE	600	115	715	762	613
F. JIRAMA	2,157	414	2,571	2,085	2,085
G. Housing Credits	2,000	90	2,090	2,101	2,101
H. Consultant Services	1,736	78	1,814	1,447	1,237
Total	23,742	4,004	27,746	28,427	19,231
(2) Credit 1526-1-MAG					
A. Port	5,800	1,252	7,052	6,325	4,866
B. Airport	200	30	230	202	173
C. Roads	2,000	297	2,297	3,246	1,690
D. Public Buildings	5,100	758	5,858	4,809	2,837
F. JIRAMA	0	0	0	353	353
H. Consultant Services	1,300	63	1,363	1,429	923
Total	14,400	2,400	16,800	16,365	10,842
Grand Total	38,142	6,404	44,546	44,791	30,073

N.B. Cost overrun is US\$ 245,000, i.e. 0.55% of total Project cost.

B. PROJECT FINANCING

(1) First Project	(US\$ Million)
Credit 1526-0-MAG	15.0
Credit 663-MAG (Second Education Project)	0.7
Credit 1002-MAG (Water and Sanitation Project)	2.0
Cr.1391 and SF4-MAG (Sixth Highway Project)	0.5
Government	5.0
Duties and Taxes	4.5
Total:	27.7
(2) Second Project	
Credit 1526-1-MAG	10.0
Credit 1694-MAG (Third Railway Project)	1.0
Government	3.6
Duties and Taxes	2.2
Total:	16.8
Grand Total:	44.5

N.B. In addition to this US \$ 1.0 million for the port of Toamasina, Credit 1694-MAG also included US \$ 1.0 million for repairs to the railway system itself.

6. USE OF BANK RESOURCES

A. STAFF INPUT

Stage of Project Cycle	Staff Weeks	
	Cr.1526-0	Cr.1526-1
Through Appraisal	5.80	0.0
Appraisal through Board Approval	21.30	5.6
Board Approval through Effectiveness	14.50	2.3
Supervision	47.50	14.6
TOTAL	89.1	22.5

Source: Bank MIS

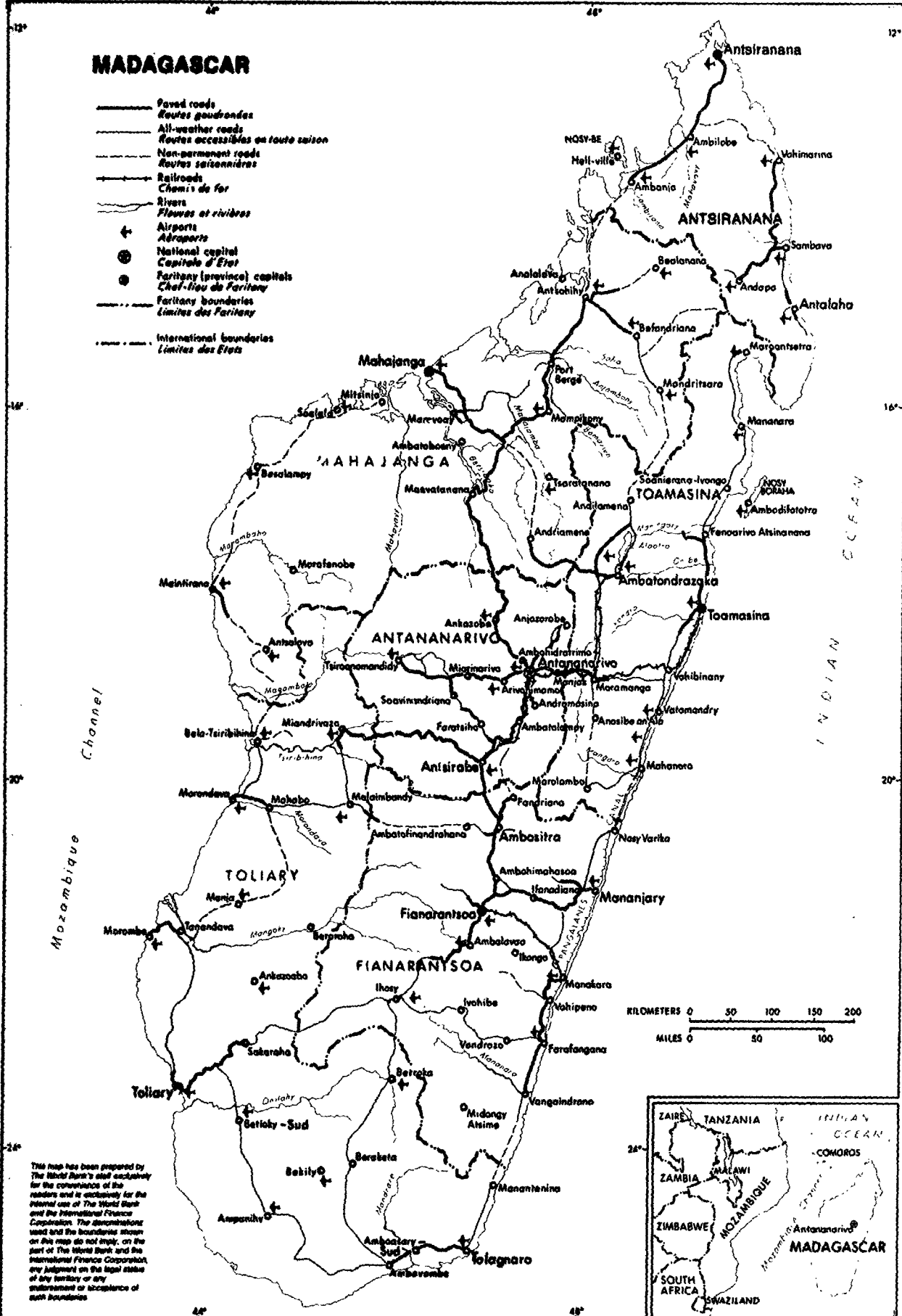
B. MISSIONS

Stage of Project Cycle	Starting	date ending	Days in Field	number of persons	Specialization represented	Status
Through Appraisal						
Appraisal through Board Approval	05/25/84	06/05/84	11	4	highway, water and port	
Board Approval through Effectiveness	11/30/84	12/18/84	18 (partly)	2	2 engineers	
Supervision	02/19/85	03/05/85	14	1	engineer	1
	05/19/85	06/04/85	16 (partly)	2	engineer and financial analyst	1
	09/05/85	09/24/85	19	1	engineer	1
	01/26/86	02/09/86	14 (partly)	1	engineer	1
Appraisal of supplemental credit	04/13/86	04/27/86	14	6	4 engineers, roads, ports, railway and	
Supervision	09/19/86	10/04/86	15 (partly)	3	port engineer and 2 transport economist	1
	11/27/86	12/12/86	15 (partly)	1	engineer	1
	03/06/87	03/19/87	13	1	engineer	1
	10/01/87	10/15/87	14	1	engineer	1
	01/19/88	02/10/88	22 (partly)	1	engineer	1
	09/18/88	10/02/88	15 (partly)	1	engineer	1
	02/12/89	02/26/89	14 (partly)	1	engineer	1
	06/29/89	07/19/89	20 (partly)	2	2 engineers	1
	11/26/89	12/07/89	11 (partly)	2	2 engineers	1
	06/03/90	06/10/90	7 (partly)	1	engineer	1

Source: Bank Project File

MADAGASCAR

- Paved roads
Routes goudronnées
- All-weather roads
Routes accessibles en toute saison
- - - - Non-permanent roads
Routes saisonnières
- +—— Railroads
Chemins de fer
- ~~~~~ Rivers
Fleuves et rivières
- + Airports
Aéroports
- National capital
Capitale d'Etat
- Province (province) capitals
Chef-lieu de Province
- - - - Province boundaries
Limites des Provinces
- - - - International boundaries
Limites des Etats



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