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REPORT AND RECOMMENDATION OF THE PRESIDENT

TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO THE

REPUBLIC OF MAURITIUS

FOR THE

RURAL DIVERSIFICATION PROGRAMME



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CURRENCY EQUIVALENTS

Currency Unit	=	Mauritian Rupee (MUR)
USD 1.00	=	MUR 24
MUR 1.00	=	USD 0.042

WEIGHTS AND MEASURES

1 kilogram (kg)	=	2.204 pounds (lb)
1 000 kg	=	1 metric tonne (t)
1 kilometre (km)	=	0.62 miles (mi)
1 metre (m)	=	1.09 yards (yd)
1 square metre (m ²)	=	10.76 square feet (ft ²)
1 acre (ac)	=	0.405 ha
1 hectare (ha)	=	2.47 acres

ABBREVIATIONS AND ACRONYMS

AREU	Agricultural Research and Extension Unit
AWP/B	Annual work programme and budget
CCU	Community credit union
CIC	Community Implementation Committee
DBM	Development Bank of Mauritius
EDO	Enterprise development officer
EU	European Union
FAD	Fish aggregating device
FST	Family support team
IA	Irrigation Authority
JPIU	Joint programme implementation unit
M&E	Monitoring and evaluation
MEDPRD	Ministry of Economic Development Productivity and Regional Development
MOA	Ministry of Agriculture
MOF	Ministry of Finance
MOFC	Ministry of Fisheries and Cooperatives
MURD	Ministry of Urban and Rural Development
MWFWCD	Ministry of Women, Family Welfare and Child Development
NEB	National Entrepreneurs Bank
NGO	Non-governmental organization
O&M	Operation and maintenance
PCU	Programme coordination unit
PIC	Subprogramme implementation committee
PME	Participatory monitoring and evaluation
PMUR	Subprogramme management unit for Rodrigues
PRA	Participatory rural appraisal
PSC	Programme steering committee
SSADP	Small-Scale Agricultural Development Project
SSE	Small-scale microenterprise
UNDP	United Nations Development Programme



UNOPS	United Nations Office for Project Services
VCA	Village Council Area
WEU	Women's Enterprises Unit
WUA	Water users' association

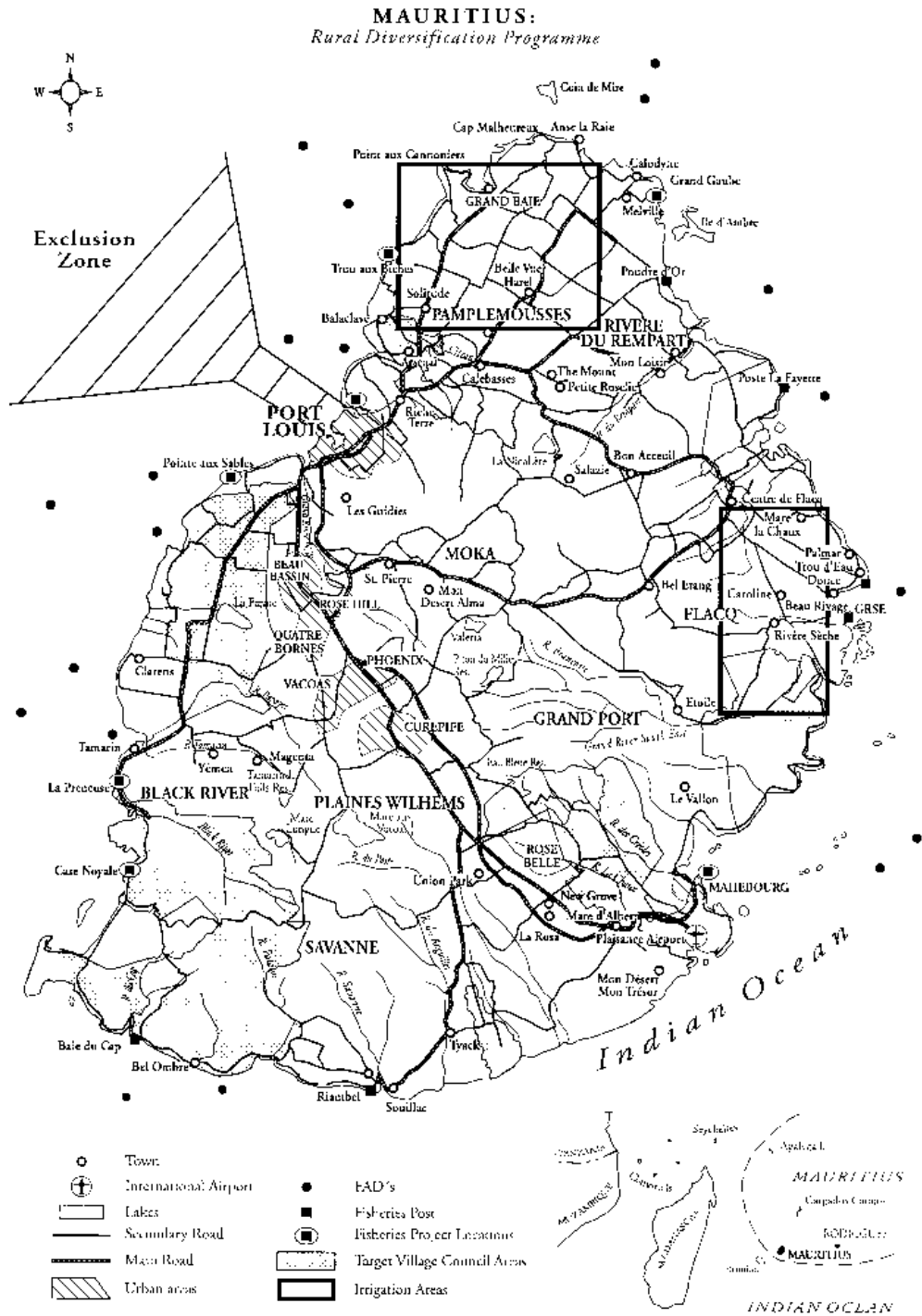
GOVERNMENT OF THE REPUBLIC OF MAURITIUS

Fiscal Year

1 July - 30 June



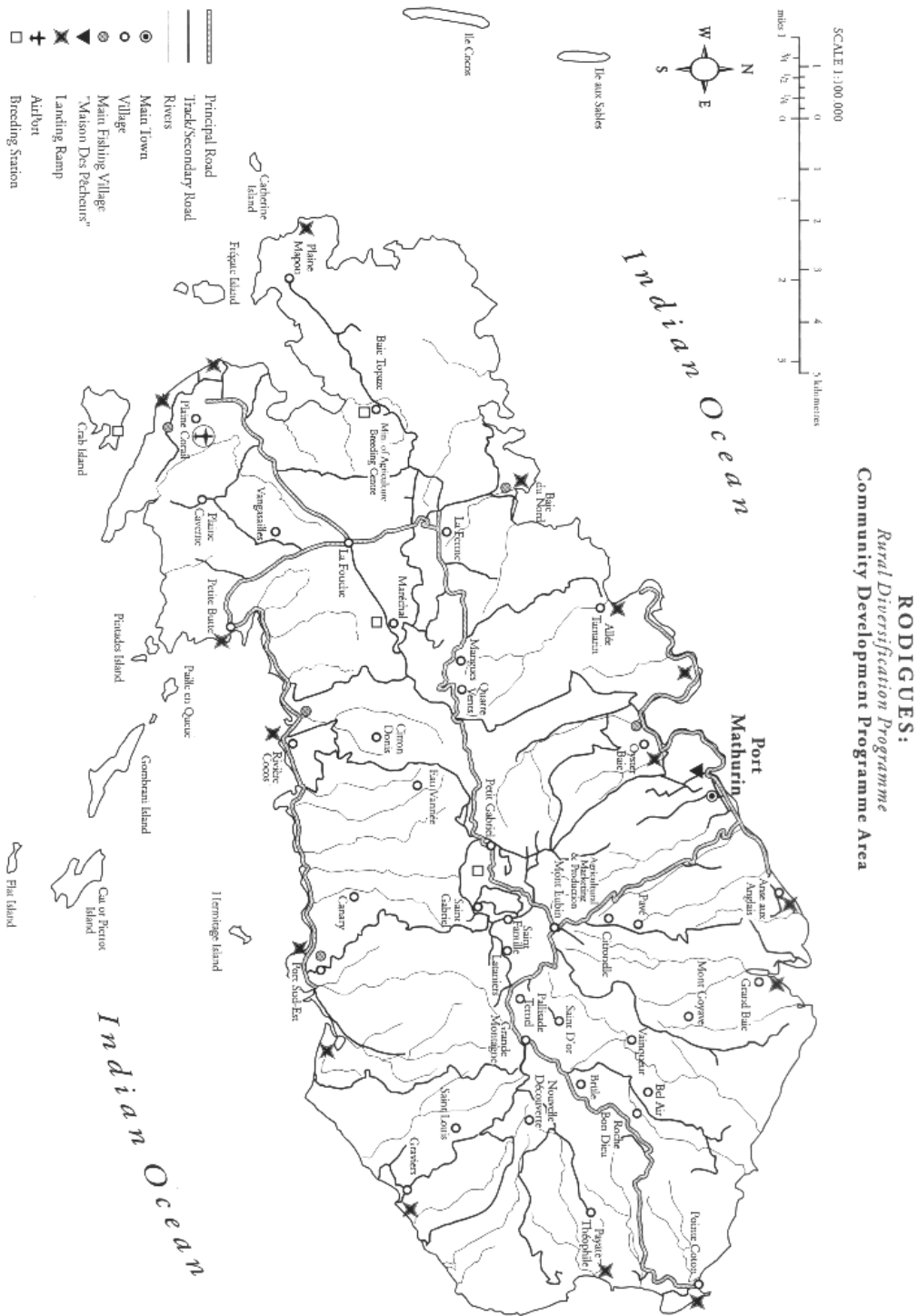
MAP OF THE PROGRAMME AREA



Source: IFAD Appraisal Report.

The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

MAP OF THE PROGRAMME AREA



RODIGUES:
Rural Diversification Programme
 Community Development Programme Area

Source: IFAD Appraisal Report.

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REPUBLIC OF MAURITIUS
RURAL DIVERSIFICATION PROGRAMME
LOAN SUMMARY

INITIATING INSTITUTION:	IFAD
BORROWER:	Republic of Mauritius
EXECUTING AGENCY:	Ministry of Finance (MOF)
TOTAL PROGRAMME COST:	USD 16.6 million
AMOUNT OF IFAD LOAN:	SDR 8.2 million (equivalent to approximately USD 11.1 million)
TERMS OF IFAD LOAN:	20 years, including a grace period of five years, with an interest rate of one half of the reference interest rate per annum as determined by the Fund annually
CONTRIBUTION OF THE BORROWER:	USD 4.7 million
CONTRIBUTION OF THE BENEFICIARIES:	USD 0.6 million
FINANCIAL INTERMEDIARIES:	USD 0.2 million
APPRAISING INSTITUTION:	IFAD
COOPERATING INSTITUTION:	United Nations Office for Project Services (UNOPS)



PROGRAMME BRIEF

Who are the beneficiaries? The number of households expected to benefit from the programme amounts to 15 180, of which 1 160 small farmers, 1 220 artisanal fishermen and 2 200 microentrepreneurs will be direct beneficiaries. The remaining 10 600 households will benefit both directly and indirectly through the activities of the community development subprogramme. The beneficiaries are the poor and poorest households belonging to the following socio-economic strata: unemployed; small planters; landless rural labourers; fishermen; unskilled (mostly female) labourers; and female-headed households. As a general rule, the poor live in deprived rural and peri-urban areas; they have limited educational and vocational skills and their earning opportunities through self-employment are limited. The typical beneficiary household earns less than half the average national household income of approximately USD 2 730 per year. The average irrigation farmer owns less than 1.0 ha of cultivable land and lives mostly in the north and eastern regions, categorized as the poorest on the island of Mauritius.

Why are they poor? The various participatory rural appraisal (PRA) exercises, socio-economic surveys and focus group discussions undertaken during the preparatory stage indicate that poverty among the target group is mainly attributable to: (i) lack of extension services and irrigation water for growing food and vegetable crops; (ii) over-exploitation of fish stocks within the reef and lack of opportunities due to non-availability of credit and training or the technical support services that would enable the fishermen to fish outside the reef; (iii) lack of access of the poorer households to financial services due to rigid and complex Development Bank of Mauritius (DBM) lending procedures, that have precluded their being involved in any form of income-generating activities; and (iv) inadequate rural socio-economic infrastructure.

What will the proposed programme do for them? The programme is expected to increase the income of poorer households living below the poverty line through : (i) expansion of irrigated areas and rehabilitation of existing dilapidated schemes in the north and eastern regions of the Mauritius islands, which will help the farmers to grow at least two, and sometimes three, crops; (ii) provision of credit, fishing gear, boats and technical support for the fishermen to increase their catch from outside the lagoon; and (iii) development of microenterprises and community development initiatives to increase the opportunity for poorer households to engage in income generating-activities. Major community development initiatives will include rural roads, bridges, construction of wells for drinking water, etc.

How will the beneficiaries participate in the programme? The design of the programme is based entirely on a demand-driven approach, and the beneficiaries have been actively involved in every stage. Beneficiary participation is conceived within the following framework: (i) irrigation and community development activities: the initial feasibility assessment will be undertaken by groups to review financing needs. Each group will subsequently enter into formal agreements with the public or private sector that stipulate the rights and responsibilities of all parties during the construction and implementation phases. This will enable groups to retain full control over the proposed activities; (ii) most microenterprise activities will be owned by individual entrepreneurs, who will be assisted by the Ministry of Women, Family Welfare and Child Development (MFWFCD) and the designated non-governmental organization (NGO) to secure the necessary financing, training and technical assistance. The existing lending procedures will be further simplified to cater specifically to the needs of targeted beneficiaries; and (iii) beneficiary representatives will be included on the programme steering committees (PSCs) of each subprogramme, thus facilitating their involvement in the formulation and review of annual work programmes and budgets (AWP/Bs).



**REPORT AND RECOMMENDATION OF THE PRESIDENT OF IFAD
TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO THE
REPUBLIC OF MAURITIUS
FOR THE
RURAL DIVERSIFICATION PROGRAMME**

I submit the following Report and Recommendation on a proposed loan to the Republic of Mauritius for SDR 8.2 million (equivalent to approximately USD 11.1 million) on intermediate terms to help finance the Rural Diversification Programme. The loan will have a term of 20 years, including a grace period of five years, with an interest rate of one half of the reference interest rate per annum as determined by the Fund annually. It will be administered by the United Nations Office for Project Services (UNOPS) as IFAD's cooperating institution. In accordance with paragraph 36 of IFAD's Lending Policies and Criteria, the loan is proposed to be made on intermediate terms in view of the following: (i) as a small island economy, the country's growth is dependent on a very narrow range of products, which are susceptible to external shocks; (ii) the desire to provide incentives to diversify the country's economic base from highly subsidized sugar cane production to other potential economic activities; and (iii) the loan will help relieve the country of its high debt situation so that it can continue its efforts towards poverty alleviation and sustainable development, particularly in Rodrigues Island and the poorer regions on the island of Mauritius.

PART I - THE ECONOMY, SECTORAL CONTEXT AND IFAD STRATEGY¹

A. The Economy and Agricultural Sector

1. **The economy.** The Republic of Mauritius is composed of four main tropical islands of volcanic origin — Mauritius, Rodrigues, Agalega and St. Brandona — located in the Indian Ocean about 2 400 km east of the African continent. With an area of only 1 865 km² and a population of about 1 200 000 people, Mauritius is the largest and most populous island of the group. Rodrigues is 550 km further to the east and has a population of nearly 35 000 living on a land area of 108 km².

2. Since independence in 1968, Mauritius has had a remarkable economic performance, with an average yearly growth rate of 5.6%, mostly from sugar, industry, the tourism sector and financial services. It is estimated that, in 1997, the manufacturing, tourism and agriculture sectors contributed about 25%, 17.9% and 8% of Gross Domestic Product (GDP), respectively. The 1997 Household Budget Survey estimated the national average yearly income per household (average household size 4.4 persons) to be USD 5 552 compared to a Gross National Product per capita of USD 3 380.

3. Mauritius, however, is now at a crossroads. Notwithstanding the economic progress achieved by the country during the last two decades, the economy now faces a number of constraints and vulnerabilities that leave its success fragile: (i) heavy dependence on foreign trade, due to the limited and poor resource base (the import-to-GDP ratio is about 60% compared to 20% for the average oil-importing developing country); (ii) small market size, making it difficult to benefit from economies of scale; (iii) limited access to international capital markets; and (iv) heavy reliance on sugar and tourism

¹ See Appendix I for additional information.



for foreign exchange earnings makes the country extremely susceptible to external financial shocks. The United Nations has recognized the special challenge facing the small island states and General Assembly Resolutions 47/186 of 1992 and 49/100 of 1994 appealed to the international community to provide special support to such countries, including financial assistance on concessional terms.

4. **Agricultural sector.** Historically, Mauritius has never enjoyed food self-sufficiency. Some 150 000 t of rice and wheat (90% of its main staples), 31 000 t of cooking oils and fats and 4 000 t of fresh fruits and vegetables are imported annually. Sugar cane dominates the growth of the agricultural sector by virtue of its leverage as a major foreign exchange earner (23%) and supplier of raw materials to the manufacturing sector (33%). Of the total 85 000 ha of cultivated land, about 77 000 ha are under sugar cane cultivation, which is grown under both rainfed and irrigated conditions.

5. In recent years, despite the dominance of sugar, there has been an increasing trend towards the cultivation of food crops, particularly vegetables due to their relatively higher financial returns. There is tremendous potential to increase both the production and yields of these crops if appropriate measures are taken to address the critical constraints on the smallholders' production system, i.e.: (i) lack of irrigation water has been responsible for reducing yields of food crops, vegetables and sugar cane by at least 50% and its effects are more pronounced at times of drought or erratic rainfall when crop production is estimated to decline by 80% or more; (ii) the inadequate institutional capacity of the existing Agricultural Research and Extension Unit (AREU) of the Ministry of Agriculture (MOA) has prevented small farmers from obtaining the high-yielding seeds, planting materials, improved technical services and training needed to grow food and vegetable crops; and (iii) a weak marketing infrastructure, facilities and information system that prevent the farmers from obtaining a remunerative price for their farm produce and generally act as serious disincentives to farmers' increasing their production.

6. **Artisanal fisheries.** There are about 2 900 registered artisanal fishermen on the island of Mauritius and another 1 900 on Rodrigues, all of whom are engaged in fishing within the coastal lagoon and along the extended edges of the reef. The total fish catch is estimated at around 20 000 t, of which about 4 000 t derive from artisanal fisheries, with an average annual return to fishermen of about MUR 40 000-60 000. However, both the catch rate within the lagoon and the fishermen's income appear to have stagnated due to over-exploitation and depletion of resources within the reef. The lagoon is also increasingly under pressure from recreational and sports fishing, which directly competes with the fishermen. Recognizing the deteriorating resource situation within the lagoon, the Government has adopted a comprehensive policy to encourage fishermen to relocate to alternative off-lagoon sites and use fish aggregating devices (FADs). At present, about 175 fishermen are engaged in FAD fishing, with an estimated total catch of 400 t annually and an average income of about MUR 100 000 which is twice that of the average fisherman. The Government has requested IFAD to assist in establishing an appropriate operational mechanism for providing financial services to the poorest fishermen, particularly women, in providing training and in setting up both a sound monitoring system and regulatory practices.

7. **Small-scale microenterprises.** Any microenterprise in Mauritius and Rodrigues is defined as a small, localized (one-to-three-person) operation involved in value-added or service-related activities, including trading in rural and peri-urban locations. According to the 1992 census, there were then about 41 000 small enterprises in Mauritius, half of which were itinerant or mobile units. These enterprises contributed almost 13% of GDP and engaged 24% of the working population in employment. Overall employment in the microenterprise subsector has increased considerably, from 12% in 1990 to about 17% in 1995, mostly in small businesses such as services, shops and market sales (32%), and crafts and trades (36%).



8. The needs assessment survey undertaken during the preparatory and appraisal stages of the programme indicated that the major constraints encountered in the small-scale microenterprise (SSE) subsector, particularly by the IFAD target groups, are as follows: (i) inadequate financial management and control; (ii) lack of product differentiation, in the sense that production is neither geared to customer preferences nor attuned to find a market niche commanding a premium price; (iii) insufficient access to credit, particularly for women, due to complex procedures and rigid collateral requirements; (iv) inadequate production technology and lack of skills and training; and (v) scarcity of market information or promotion for sales. Despite these constraints, the prospects for further increases in revenue, employment and opportunities under this subsector are very positive. Exploitation of this potential will necessitate: (i) further reorientation and expansion of the outreach capacity of existing public institutions responsible for promoting the SSEs, such as the Small and Medium Enterprise Development Organization (SMIDO), the National Handicrafts Centre (NHC) and the Women's Enterprises Unit (WEU) of MFWCD, so as to reach low-income families involved in small microenterprise activities (SMA); (ii) the extension of technical and financial services, particularly to women and poorer groups, in order to improve the quality of products and services; and (iii) establishment of appropriate linkages with the private sector and NGOs for sensitization, awareness-building, product marketing and the promotion of SSEs.

B. Lessons Learned from Previous IFAD Experience in Mauritius

9. To date, the Fund has financed one investment project in Mauritius, the Small-Scale Agricultural Development Project (SSADP) declared effective in May 1983 and financed with an IFAD loan of SDR 5.25 million on intermediate terms. By project closure in 1991, the IFAD loan had been fully disbursed.

10. An *ex post* evaluation mission fielded by IFAD in July 1997 concluded that SSADP had achieved good results from a developmental perspective and that it had contributed substantially to improving the overall living conditions of the target group. The line of credit provided acted as a catalyst for promoting small-scale lending to agricultural and non-agricultural activities, uncovering a previously unmet demand for small-scale financial services, an issue also addressed in the proposed programme. Moreover, SSADP's general line of credit helped in the creation of various small and medium-sized enterprises, and made a valuable contribution to the generation of an entrepreneurial culture among the poor. The major findings of the *ex post* evaluation, in terms of IFAD's future interventions in the country, were: (i) the target group in Mauritius is currently interspersed throughout the economy and only partially involved in primary activities such as agriculture. Consequently, any future poverty-alleviation strategy must include specific targeting criteria to benefit the poor together with an action programme for developing of a range of farm and non-farm activities that will help them diversify their production base; (ii) sustainability requires active beneficiary participation and involvement at every stage of the project cycle so as to enable the programme to respond to their specific needs, constraints and preferences; (iii) the successful implementation of the rural financial services component of SSADP warrants the involvement of qualified NGOs and other financial intermediaries to complement and reinforce the work of DBM; and credit should be provided on demand for financially viable activities; and (iv) the establishment of a framework for monitoring and evaluation (M&E), based on the participation of programme beneficiaries, is essential. All these findings and recommendations have been taken into account in designing the proposed Rural Diversification Programme, which will help the Government to address poverty-alleviation issues in a sustainable manner consistent with market forces.

C. IFAD's Strategy for Collaboration with Mauritius

11. **Mauritius's policy for poverty eradication.** Poverty in Mauritius is relative rather than absolute, and is often localized. However, poverty is quite apparent and the distribution of income is highly unequal, with a gini coefficient of 0.32. The majority of the poor and poorest households belong to the following groups: unemployed; small planters; landless rural labourers; fishermen; unskilled (mostly female) labourers in the Export Promotion Zone; and female-headed households.



The Government's recent poverty study indicates that about 24% of all households in Mauritius and 47% in Rodrigues are to be considered as poor. Their low income reflects the unavailability of technological means and access to capital to undertake productive activities. Based on that study, the Government is committed to pursuing a set of strategic measures to combat poverty. These comprise: (i) diversifying the existing production system with a broad-based poverty-alleviation strategy responding to the felt needs of the poor; (ii) fostering local development, particularly in economically depressed regions, by providing access to finance, management and technical know-how to enable the poor to become self-reliant; (iii) encouraging small microenterprises in the non-farm, farm and fishing sectors and improving returns from such activities, both in terms of income and productivity; and (iv) developing a comprehensive programme for Rodrigues through creating economic and social infrastructure and additional income-generating opportunities (for the poorest section of the community).

12. **The poverty eradication activities of other major donors.** Since independence a large number of donors, including the Overseas Development Administration (United Kingdom), *Caisse centrale de coopération économique* (France), *Fonds d'aide et de coopération* (France), and the United States Agency for International Development have supported the Government's efforts to increase agricultural production by improving small-scale irrigation systems. More recently, the irrigation subsector has been further strengthened with support from the European Union (EU) and the World Bank, through the French-funded Northern Plains Irrigation Project and by strengthening the managerial and technical capacity of the Irrigation Authority (IA). Within the context of the proposed programme, IFAD has reached a broad understanding with existing and prospective donors in terms of cooperation and complementarity within the framework of the Government's poverty-alleviation strategies, particularly in areas of: (i) development of downstream activities and software components for the small-scale irrigation system; (ii) strengthening the capacity of existing institutions to ensure timely delivery of rural financial services to low-income families, and (iii) improving the basic infrastructure and facilities for economic and social development on Rodrigues. Within these broad parameters, IFAD will cooperate with: EU, within its planned programme assistance in crop diversification and microenterprise development in Mauritius and community development and environmental support activities on Rodrigues; the Government of the United States within the scope of its microenterprise programme in Mauritius and Rodrigues; the Japanese International Cooperation Agency, based on technical assistance to develop the fisheries subsector, both in Mauritius and on Rodrigues; and the United Kingdom with regard to the provision of technical assistance to MWFCD for microenterprise development.

13. **IFAD's strategy in Mauritius.** IFAD's strategy for Mauritius is guided by its operational experience and the Government's development priorities for the agriculture sector and poverty alleviation objectives (i.e. employment generation, diversification of agriculture and natural resource conservation). Within this framework, IFAD's strategy involves a three-pronged strategic approach. First, to assist the country to introduce necessary technological change and strengthen its support services capacity towards non-sugar crops in order to promote agricultural diversification in the smallholder sector. Second, to assist the Government to alleviate rural and peri-urban poverty through selective investments in key productive, but potential growth, sectors capable of producing a significant short-term economic impact. Third, to support the formulation of a comprehensive area development strategy for the island of Rodrigues, consisting of a series of discrete community initiatives aimed at increasing the incomes of, and employment opportunities for, poor people.

14. **Programme rationale.** Given the country's location, limited natural resource base and stagnation in traditional growth areas, there is need for a shift in the productive structure of the economy to a large number of diversified and relatively underdeveloped subsectors with high growth potential, and that represent strategic areas for the poor and disadvantaged groups to improve their economic opportunities, income and well-being. The rationale for IFAD's assistance and choice of investments is dictated by the following considerations, including its past experience in the country:



(i) irrigated agriculture development — a selective approach to investment in small-scale irrigation, based on sound technical, social and economic criteria to raise the productivity of land cultivated by the smallholders, and the establishment of an appropriate institutional framework to enable the farmers to own, operate and maintain the irrigation systems; (ii) development of FAD fisheries — exploring opportunities to expand FAD fisheries outside the lagoon by helping fishermen to make the transition from net fishing and assisting the Government to conserve and exploit fish resources to a sustainable level; (iii) financial services — improving the access of low-income families to financial services by establishing appropriate mechanisms and modalities for the distribution of credit for various income-generating activities; and (iv) undertaking community development initiatives in order to create sustainable social and economic infrastructure in the most deprived areas of Mauritius and Rodrigues.

PART II - THE PROGRAMME

A. Programme Area and Target Group

15. The whole of the islands of Mauritius and Rodrigues will be considered as areas of IFAD intervention, with the following targeting criteria: (i) geographic specification — on the island of Mauritius, attention will be concentrated on the north and eastern regions, where people earn 50% and 30% less than the average national per capita income. Here, the average landholding is of less than 1 ha, and considerable potential exists for expanding the area under irrigation. Within this broader specification, subprogramme activities will be directed to 24 village council areas (VCAs) that are considered to be relatively deprived and have not benefited significantly from past development activities. A comprehensive development programme will be implemented for the entire island of Rodrigues; (ii) self-targeting investments — small-scale income-generating activities, such as fishing, vegetable growing, poultry raising, bee-keeping, sewing, etc., of interest only to the poorer and coastal households, will be financed throughout the country; and (iii) target group criteria — support will be directed to village-level community groupings or associations, i.e. women-headed household, landless, and resource-poor families.

16. A total of 15 180 households in Mauritius and Rodrigues are expected to benefit from the programme. The majority of the poor consist of small and marginal planters, artisanal fishermen, unemployed, landless rural labourers, unskilled (mostly female) labourers and female-headed households. All these groups face production constraints, namely, inadequate access to financial resources and improved production technology, poor education, and limited vocational skills and training.

B. Objectives and Scope

17. The goal of the programme is to stimulate diversified and sustainable economic development for low-income households. This will be achieved by: (i) diversifying and improving the income and resource base of poor, particularly low-income, households; (ii) developing institutional modalities and instruments to enable the poor to avail themselves of increased economic opportunities from agriculture, fishing and off-farm microenterprises; and (iii) improving the technical and entrepreneurial capacity of the target group through training and the strengthening of grass-roots groups and organizations, in close cooperation with the private sector, NGOs and civil society.

C. Subprogrammes

18. The programme will be demand-driven, responding to feasible and viable options of individual households/communities over a period of six years. Its objectives will be achieved through a set of four distinct subprogrammes, directly geared to increasing production based on the investment opportunities available in irrigated agriculture development; microenterprise and microfinance; development of FAD fishing; and community development initiatives.



19. The subprogrammes are interlinked and integrated in a strategic sense, i.e.: (i) each is targeted at a specific group or area identified as a potential growth centre; (ii) all respond to the critical needs, priorities and preferences of the beneficiaries; and (iii) they will be characterized, as a common feature, by beneficiary participation in decision-making and implementation.

Irrigated Agricultural Development

20. This subprogramme will finance five complementary activities, including:

21. **Rehabilitation and consolidation of at least six irrigation schemes**, covering a total area of 250 ha in the northern and eastern regions (Arsenal Litchi, Riche Toerre, Belle Mare, Sovenir, Riviere du Rempart), will be financed with a view to increasing agricultural production and promoting diversification of alternative viable food crops. Provision will be made for: (i) repair and replacement of in-field irrigation equipment and headworks; (ii) procurement of basic equipment and transport facilities (motorcycles) for pump operators and water guards, and tools and spare parts for operation and maintenance (O&M); (iii) rehabilitation and modernization of irrigation civil works and structures; and (iv) an assessment of the constraints on, and conditions for, effective transfer of irrigation management responsibilities to farmers, and formulation of a legal framework.

22. **Development of new small-scale irrigation schemes** (Victoria), covering a total area about 150 ha in the eastern regions under a participatory approach. This will involve about 300 beneficiaries in design and implementation, and commit them to contributing to in-field investments and assume responsibility for scheme management. A group of planters from the Victoria scheme have already submitted a formal request to the IA regarding the development of an area of about 150 ha. The available water supply at the proposed headwork is adequate to irrigate up to some 250 ha. Proposed investments for the Victoria scheme will include: (i) survey, design and preparation of tender documents; (ii) construction of a delivery weir across the River Sèche; (iii) a pump house and pumping equipment; (iv) a 4-km main delivery pipeline; (v) a distribution network; (vi) in-field irrigation equipment, including portable pipes, hydrants, hoses and sprinklers; (vii) facilities for derocking; and (viii) annual O&M costs, including labour, power and minor repairs.

23. **Establishment of water users' associations (WUAs)**, or equivalent legal entities, to enable the beneficiaries to assume full responsibility for operating and maintaining the irrigation systems. A specialized NGO will be recruited to assist in forming and training WUAs to strengthen their capacity for scheme management and implementation. The WUAs' responsibilities will consist of: (i) organizing the farmers into groups and helping them prepare initial technical proposals for assistance; (ii) undertaking farmer needs assessment surveys; (iii) helping the WUAs to formulate by-laws and ensure their commitment with regard to water charges and cost recovery; and (iv) organizing training programmes for the farmers through IA and AREU for O&M of irrigation systems and on-farm water management.

24. **Improved extension delivery.** The programme will support the diversification of agriculture by strengthening the capacity of AREU to play a constructive role in disseminating improved technological packages for food and non-sugar cane crops to farmers and planters. AREU has experienced staff shortages, problems and a lack of information outreach. These constraints will be addressed by: (i) improving AREU's extension delivery and technical back-up services through the deployment of 12 extension staff to the northern regions; (ii) provision of financing to enhance the technology testing, verification, and assessment capacity of the Mapon demonstration centre; (iii) strengthening the market information, communication and dissemination system to enable fruit and vegetable growers to respond to market demands and obtain higher farmgate prices; and (iv) provision of technical assistance, training, incremental operating costs, farm equipment and vehicles.



25. **Institutional strengthening and technical assistance.** Provision will be made for: (i) training of irrigation staff, farmers and WUAs in O&M, on-farm water use and participatory irrigation management (including study tours); (ii) technical assistance for farmers, to be provided by national and internationally-recruited consulting firms and NGOs in water management, WUA formation, and irrigation planning and design; (iii) preparation of appropriate legislation for the establishment of WUAs; and (iv) office equipment, facilities and vehicles, particularly for the investigation and research cell of the Irrigation Planning Unit (IPU), and the services of one communications development officer.

Fisheries Development

26. The subprogramme will be aimed at increasing the income-generation capacity of artisanal fishermen and relieving pressure on vulnerable marine stocks in the lagoons. Every effort will be made to build on the Government's compensation package designed to provide incentives to fishermen as part of their agreement to surrender net fishing licenses within the lagoon and participate in the proposed new programme. It is estimated that 45 net licenses and 97 gill nets will be surrendered, based on compensation payments to 390 individual fishermen and about 390 members of fishing cooperatives. The total base cost of the compensation plan is estimated at USD 1.04 million. The key elements of the subprogramme are:

27. **Financing of FADs and new boats.** Provision will be made for about 24 new and 36 replacement FADs to be positioned around Mauritius and Rodrigues over a period of six years. To enable the fishermen to increase their catch, a total of 170 new fishing boats (42 for Rodrigues), equipment and gear will be made available through a line of credit provided under the microfinance development subprogramme. All boats will be made locally in accordance with customer specifications; the eligibility for obtaining loans under the subprogramme will be contingent upon fishermen making an equity contribution of about 60% of the boat costs and agreeing to contribute to the FAD O&M costs fund.

28. **Institutional strengthening.** Provision will be made for: (i) training of about 440 fishermen from Mauritius and 126 from Rodrigues in line fishing techniques (including trolling) around FAD, boat handling, navigation, etc.; and (ii) enhancing the capability of the Fisheries Protection Services to carry out the monitoring, surveillance and enforcement of FAD fisheries essential for the success of the subprogramme.

29. **Technical assistance.** Three studies will be financed to enable the Government to assess the impact of the programme and identify feasible alternative activities particularly suitable for women involved in octopus fishing in Rodrigues. These studies will involve: (i) regular assessment of the effect of FAD fishing on fish stocks, marine resources, the environment and the fishermen involved; (ii) assessment of potential market outlets both inside Mauritius and overseas for high-value species, including improvements needed for handling, storage and landing; and (iii) a feasibility study on seaweed farming in Rodrigues.

Microenterprise and Microfinance

30. The subprogramme is designed to help increase opportunities for gainful employment among the poorest segment of the population, especially women, and to boost the productivity, efficiency and effectiveness of the small-scale enterprises/activities currently operated by them.

31. **Microfinance development.** Funds will be provided for: (i) offering a line of credit through DBM and the National Entrepreneurs Bank (NEB) to solvent, organizationally-sound financial intermediaries, particularly community credit unions (CCUs). These funds will be onlent to the target clients (individuals and groups) for income-generating activities such as food processing, garments, bakery, jewellery, toys, FAD fishing, etc.; (ii) assisting CCUs and WEU to prepare retail credit operational plans and establishing a sound accounting, management and monitoring system through



the recruitment of an experienced international NGO; (iii) strengthening the technical and financial management capacity of DBM, NEB and CCUs to enable them to prepare an action plan, improve supervision capacity, recover loans and perform monitoring functions; and (iv) allowing DBM and NEB to extend loans directly to beneficiaries using existing channels of operation. The credit package will involve long and short-term loans, which will be extended to the beneficiaries based on appropriate eligibility criteria. The annual lending rate will be positive, based on annual reviews by the Government and IFAD to ensure the sustainability of the programme.

32. Microenterprise development. Existing microenterprises will be encouraged and new ventures promoted, with appropriate packages of assistance and services to improve operational efficiency and financial viability. The major activities to be supported include: (i) strengthening the technical and management capacity of WEU to provide customized support services to potential investors; (ii) establishing an outreach programme to support microenterprise activities undertaken by WEU; (iii) recruitment of five enterprise development officers (EDOs) to work in the field with existing family support teams (FSTs); (iv) beneficiary training in product design, technology and marketing of produce; (v) training of five EDOs, 55 FSTs and 3 000 beneficiaries based on their specific needs, particularly in the areas of business analysis, production, processing, bookkeeping, quality control, etc.; and (vi) equipment, transport for staff mobility and product promotion, technical assistance, and incremental recurring costs.

Community Development

33. A series of community-based interventions, both in Mauritius and Rodrigues, will be financed, as follows:

34. Strengthening of grass-roots capacities. PRAs, diagnoses and planning will be undertaken by multisectoral teams working with 60 villages or community groupings with the objective of developing viable investment proposals and programmes. Lump sum funding will be provided for: (i) PRA training for 40 members of field teams from MFWCD and the Ministry of Urban and Rural Development (MURD) in Mauritius and the same number in Rodrigues; (ii) two training sessions for 14 participants on participatory monitoring and evaluation (PME); (iii) preparation of PRA and PME manuals to serve as a basis for field appraisals and follow-up; (iv) training of 300 members of the community implementation committees (CICs) in Mauritius and 250 members in Rodrigues, representing 60 grass-root communities; and (v) enhancing the participation and representation of local organizations, community leaders and women in the PSCs.

35. Community development investment funds for Mauritius and Rodrigues will be established in the amounts of MUR 40.8 million and MUR 20.0 million, respectively, to support community and group initiatives identified through PRA exercises. The funds will support activities that broadly fall under three categories: (i) viable productive investments, such as cold storage and post-harvest processing facilities, community-based irrigation schemes, fruit gardens, etc.; and (ii) social infrastructure, including local access roads, fish-landing ramps, primary marketing sites and facilities. The beneficiary communities will be required to contribute at least 25% of the initial costs, either in kind or in cash, with a commitment to maintain the schemes through the collection of user fees/charges; and (iii) support services, including training and technical assistance.

Programme Coordination Unit

36. A small programme coordination unit (PCU), within the Ministry of Finance (MOF), will be supported under the programme. The unit will be headed by a programme coordinator assisted by a finance officer and a monitoring officer recruited by the Government. Provision will be made to cover incremental operating expenditures and the cost of key staff salaries, a vehicle, office equipment, computer software and other recurrent expenditures. Provision will be made also for technical assistance to improve the monitoring and management information systems and undertake impact studies and a mid-term review.

D. Costs and Financing

37. Total programme costs, inclusive of contingencies, duties and taxes, are estimated at USD 16.6 million over a period of six years. Physical and price contingencies are estimated at USD 0.4 million (3% of base costs) and USD 1.0 million (6% of base costs), respectively. The foreign exchange element is estimated at USD 5.9 million (36% of total costs) and taxes and duties at the equivalent of USD 1.1 million (7% of total costs). Costs are based on June 1998 prices. The programme will be financed by an IFAD loan of USD 11.1 million and contributions from the Government (USD 4.7 million), beneficiaries (USD 0.6 million) and financial intermediaries (USD 0.2 million).

TABLE 1: SUMMARY OF PROGRAMME COSTS^a
(USD '000)

	Local	Foreign	Total	% of Foreign Exchange	% of Total Base Costs
Irrigated agricultural development	1 977	1 751	3 728	47	25
Fisheries development	2 836	1 430	4 266	34	28
Microenterprise and microfinance	1 161	1 018	2 179	47	14
Community development	3 157	784	3 941	20	26
Programme coordination	671	388	1 059	37	7
Total base costs	9 802	5 372	15 173	35	100
Physical contingencies	226	203	430	47	3
Price contingencies	644	326	970	34	6
Total programme costs	10 672	5 900	16 573	36	109

^a Discrepancies in totals are due to rounding.

38. UNDP is expected to provide a grant of USD 20 000 for in-service training and skill enhancement of selected MFWCD staff involved in the programme. Parallel financing is expected from the Self-Help Fund of the United States Embassy in Mauritius for microenterprise programmes and from the proposed EU programme for agricultural diversification and community development. Japanese technical assistance is expected to complement the fisheries development subprogramme. Certain budgetary expenditures up to a maximum of USD 500 000, incurred by the Government for pre-programme start-up actions, may be reimbursed retroactively. Major action foreseen will involve: recruitment of key staff, procurement of essential equipment and vehicles, and the undertaking of studies such as that on FAD fishing. In addition, part of the financing will be used for short-term technical assistance, particularly to help the Government launch important start-up actions.

TABLE 2: FINANCING PLAN^a
(USD '000)

	IFAD		Financial				Government		Total		Local (Excl. Taxes)	Duties and Taxes	
	Amount	%	Beneficiaries Amount	Beneficiaries %	Intermediaries Amount	Intermediaries %	Amount	%	Amount	%			
Irrigated agricultural development	3 246	78.3	201	4.8	-	-	699	16.9	4 145	25.0	1 942	2 006	197
Fisheries development	2 093	45.8	82	1.8	-	-	2 390	52.4	4 565	27.5	1 541	2 688	335
Microenterprise and microfinance	1 845	76.8	-	-	189	7.9	368	15.3	2 403	14.5	1 133	1 171	98
Community development	3 012	70.2	276	6.4	-	-	1 003	23.4	4 292	25.9	852	3 039	401
Programme coordination	921	78.8	-	-	-	-	248	21.2	1 168	7.0	432	666	70
Total Disbursement	11 117	67.1	559	3.4	189	1.1	4 708	28.4	16 573	100.0	5 900	9 571	1 101

^a Discrepancies in totals are due to rounding.

E. Procurement, Disbursement, Accounts and Audit

39. **Procurement.** The procurement of goods and services under the programme will be carried out in accordance with IFAD's procurement guidelines. Goods costing more than USD 200 000 and all goods relating to irrigation will be procured under international competitive bidding procedures. Other items (with the exception of irrigation equipment) costing more than USD 20 000 but less than USD 200 000 will be procured under local competitive bidding (LCB) procedures acceptable to IFAD and the cooperating institution. Items costing less than USD 20 000 will be procured under local shopping procedures acceptable to IFAD and the cooperating institution. Civil works will be procured through LCB procedures. Incremental recurrent expenditures, including salaries and allowances and other project operating expenditures, will be incurred according to applicable Government procedures. NGO and consultancy services will be engaged following international or local shopping procedures, in accordance with the guidelines of the cooperating institution. Contracts estimated to cost more than USD 100 000 will be subject to the prior review by the cooperating institution.

40. **Disbursements.** The IFAD loan will be disbursed over a period of six years, starting about mid-1999. Disbursement of programme funds for all eligible expenditures (excluding taxes and duties) under the programme will be made against submission of full supporting documentation to IFAD, except in the case of contracts valued at less than USD 25 000 (or the equivalent in local currency), which will be documented through certified statements of expenditures (SOEs). All such documentation will be made available for review by supervision missions and examination by auditors, as required.

41. **Accounts and audit.** In order to ensure the effective flow and management of programme funds, the MOF will open and operate a Special Account denominated in United States dollars, with an authorized allocation of USD 1 000 000, in an accredited commercial bank in Mauritius on terms and conditions acceptable to IFAD. Each subprogramme will have an individual account in local currency so as to facilitate disbursements. External audits of the programme will be carried out annually by the Government's director of audit or any other independent auditor acceptable to the IFAD. Audit reports and audited statements will be submitted to IFAD and the cooperating institution within six months of the close of the fiscal year.

F. Organization and Management

42. **Management and coordination.** Project design will be based on a demand-driven approach. The ultimate responsibility for implementation will rest with the beneficiaries, in collaboration with the public and private sectors and civil-society organizations, including NGOs. The role of the Government will be that of facilitator, regulator, supervisor and monitor. MOF will play a key role within this framework in terms of providing strategic policy direction, guidance and coordination,



including fund disbursement, and it will be assisted by the Ministry of Economic Development Productivity and Regional Development (MEDPRD) in the planning and M&E of the entire programme. To the extent possible, responsibility and accountability will be decentralized, whereby each of the administrative ministries/departments will be responsible, under the overall coordination of PSC, for carrying out functions and activities related to their domain. The key implementation ministries will include MOA, specifically IA and AREU; the Ministry of Fisheries and Cooperatives (MOFC), specifically the Fisheries Protection Service (FPS) and the Albion Fisheries Research Centre (AFRC); MFWFCD; and the Ministry of Rodrigues/Rodrigues Island Administration. DBM and NEB will be responsible for the on-lending of credit to microenterprises and for FAD fishing, both directly and through the financial intermediaries.

43. A small PCU will be established within MOF to oversee and facilitate implementation and carry out monitoring functions. Coordination among the implementing ministries, departments and NGOs will be ensured by a PSC to be constituted under MEDPRD according to appropriate terms of reference, with representatives of the implementing agencies, beneficiaries and NGOs. Selected major donors such as EU, France, India, Japan, United Kingdom, UNDP, and the United States, will also be represented to ensure donor complementarity and to avoid duplication of aid resources. In order to expedite and decentralize implementation, three lower-level management teams — a subprogramme implementation committee (PIC), a joint programme implementation unit (JPIU) and a subprogramme management unit for Rodrigues (PMUR) — will be established to execute and coordinate activities relating to microenterprise and community development.

44. **Beneficiary participation.** The beneficiaries have been closely involved in design and programme formulation through workshops, focus group discussions and PRAs. A central feature of the programme is the mobilization of the NGO community, both local and international, under participatory agreements with the respective implementing agencies. The NGOs will assist in the formation of local community-based groupings, including WUAs, that can take increasing responsibility for operation of their various development and income-generating activities. The overall programme will benefit from task force established at the central level with beneficiary representation, which will provide the nucleus for the PSC. In this respect, provision has been made within the community development subprogramme for regular selection or elections of representatives of groups, including WUAs, to facilitate both the formation of nation-wide associations and a greater degree of empowerment for the rural poor. Beneficiary commitments will be obtained in the form of equity, cash and labour contributions for the various subprogramme activities to be undertaken by them. In addition, the O&M costs of irrigation, fisheries and other income-generating activities will be fully borne by the beneficiaries.

45. **Monitoring and evaluation.** The participatory nature of the programme influences the guiding principles of its M&E approach and methodology. The PME system will assess the progress of subprogramme deliverables (i.e. inputs, activities and outputs) and process (i.e. sustainability, capacity-building and subprogramme replicability) at the community, service provider and programme levels. The overall responsibility for PME will rest with the coordinators of individual subprogrammes and take place at three levels, i.e. beneficiary, subprogramme and MEDPRD/IFAD/cooperating institution. It will be the responsibility of the individual subprogramme coordinators, under the guidance of the M&E cell of MEDPRD, to establish and operationalize a system of regular supervision/monitoring and follow-up together with the relevant line ministries, service providers and communities (e.g., CICs, WUAs, women's groups, etc.). Quarterly, semi-annual and annual progress and financial reports based on an agreed format will be submitted by the respective subprogramme management unit heads to the PCU's M&E officer. A mid-term review will be carried out by the Government and MOF, in consultation with IFAD/UNOPS, by the end of the third year of the programme.



G. Economic Justification

46. The indicative internal rate of return for the overall programme (excluding the community development subprogramme) over a period of 20 years is estimated at 27%. However, in terms of comparison, the rates of return for the microenterprise subprogramme are the highest, estimated at a base cost of about 46%. This is followed by irrigation with a rate of return of 15-18%, depending on the nature of the technology to be used, and FAD fisheries at 15%.

47. **Benefits and beneficiaries.** Major direct benefits of the programme will be seen in increased incomes for the targeted smallholders, fishermen and microenterprises thanks to increased production resulting from: (i) expansion of irrigated area and modernization of existing schemes; (ii) access to financial services for fishing and microenterprise activities; and (iii) appropriate use of market information, management services and other community initiatives and infrastructure development. Financial analyses have been conducted to assess how the proposed investments and new technologies will affect beneficiaries' net income, and to ascertain whether the magnitude of the incremental net benefit will be adequate to encourage them to participate in the programme.

48. The total number of direct beneficiary households is expected to reach about 15 180 at full development. This will involve: (i) about 1 160 small farmers in Mauritius; (ii) about 390 artisanal fishermen in Mauritius and 130 in Rodrigues; (iii) 2 200 microenterprises in Mauritius and Rodrigues (mostly run by women); (iv) about 700 Rodriguan women presently engaged in octopus collection could participate in seaweed production if it is proved technically and financially viable; and (v) the community development subprogramme will target 6 964 of the poorest households in 24 VCAs in Mauritius and 3 636 households in Rodrigues.

H. Risks

49. Major risks associated with the implementation of the programme relate to the ability of the concerned agencies to implement subprogramme activities through the participatory approach. Safeguards and measures to minimize this risk include: (i) involving local organizations, institutions and NGOs at the grass-roots level; (ii) beneficiary training and capacity-building aimed at enhancing participation by the communities and community groups and institutions; (iii) strengthening local institutions through training and study tours; (iv) developing proposals on the basis of needs-based assessments and response from the communities; (v) coordination at various levels of the organizational structure of the programme; and (vi) strengthening of the M&E systems. The risks of fish resource depletion and the disappearance of certain stocks have been met by incorporation of regular FAD assessment monitoring and studies, accompanied by strengthened surveillance.

I. Environmental Impact

50. **Environmental impact.** Mauritius Environmental Law does not require environmental impact assessments for fisheries development projects. However, an initial environmental examination carried out during appraisal indicated that the project would not give rise to any major or severe environmental impacts and, consequently, a full environmental impact assessment did not need to be carried out by IFAD. Nonetheless, a number of areas and issues of environmental concern that were identified will be addressed during programme implementation. There will be a need for: (i) periodic assessments of fish stocks; (ii) determination of the sustainable number and spacing of FADs; (iii) formation of specific legislation for regulation and enforcement of FAD fisheries to avoid over-harvesting; and (v) establishment of an appropriate monitoring system to reduce the possibility of programme boats being used for lagoon fishing.



J. Innovative Features

51. The programme will seek to bring about a new orientation for rural investments in Mauritius. Wherever possible, the major initiatives will be taken by the rural groups and poor households themselves, and the Government will play a supportive and catalytic role rather than acting as a top-down decision-maker. In the transformation process, the programme will use a number of innovative approaches increasingly used by IFAD elsewhere. These include: (i) programme activities will be PRA-led and beneficiary owned; (ii) involvement of qualified and experienced private sector operators and NGOs, both local and international, will help to facilitate targeting, group mobilization, and programme implementation; (iii) the community development activities and microfinance will provide a complementary platform for transfer of financial resources and investments for productive purposes to the rural poor; (iv) specific emphasis will be placed on the promotion of entrepreneurship and business activities by rural women, particularly with the assistance of MFWFCD; (v) the WUAs will be responsible for water use and O&M, and possibly input supply and marketing functions; and (vi) in FAD fisheries, an element of joint management will be introduced through the fishermen contributing to FAD/O&M and being involved in decisions about annual fishing and FAD management plans.

PART III - LEGAL INSTRUMENTS AND AUTHORITY

52. A loan agreement between the Republic of Mauritius and IFAD constitutes the legal instrument for extending the proposed loan to the borrower. A summary of the important supplementary assurances included in the negotiated loan agreement is attached as an annex.

53. The Republic of Mauritius is empowered under its laws to borrow from IFAD.

54. I am satisfied that the proposed loan will comply with the Agreement Establishing IFAD.

PART IV - RECOMMENDATION

55. I recommend that the Executive Board approve the proposed loan in terms of the following resolution:

“RESOLVED: that the Fund shall make a loan to the Republic of Mauritius in various currencies in an amount equivalent to eight million two hundred thousand Special Drawing Rights (SDR 8 200 000) to mature on and prior to 15 January 2019 and to bear an interest rate of one half of the reference interest rate per annum as determined by the Fund annually, and to be upon such other terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board in this Report and Recommendation of the President.”

Fawzi H. Al-Sultan
President



SUMMARY OF IMPORTANT SUPPLEMENTARY ASSURANCES INCLUDED IN THE NEGOTIATED LOAN AGREEMENT

(Loan negotiations concluded on 9 April 1999)

1. The Government of the Republic of Mauritius (the Government) will make such funds available from the proceeds of the IFAD loan to the Development Bank of Mauritius (DBM) and the National Entrepreneurs Bank (NEB) in order to finance the microfinance credit activities under the terms and conditions of the loan agreement. For the purpose of the microfinance credit activities, the Government will enter into subsidiary loan agreements with DBM and NEB.

2. The Government will cause the Ministry of Finance (MOF) to open and thereafter maintain in a commercial bank acceptable to IFAD a programme account, held in Rupees, into which the Government will deposit the required local counterpart funds as estimated in the annual work programme and budget (AWPB).

3. The following are additional events for the suspension of the right of the Government to make withdrawals from the loan account:

The credit by-laws of the DBM and/or the NEB and/or the financial intermediaries (FIs), or any provision thereof, has/have been suspended or terminated in whole or in part, or waived, or amended so as to, in the reasonable opinion of IFAD, affect materially and adversely the carrying out of the microfinance credit activities.

4. The Government will ensure that it will make arrangements, satisfactory to IFAD, either with local contractors or the Sugar Planters Mechanical Pool Corporation for derocking of new irrigation lands to be financed under the programme.

5. The Government will ensure that, although priority to participate in the fish aggregating device (FAD) fisheries around Mauritius and Rodrigues component will be given to registered fishermen, other potential investors — if found to be suitable and to meet the selection criteria — will also be eligible.

6. For purposes of the microfinance credit activities, DBM, NEB and each FI will adopt credit by-laws approved by IFAD and apply them to all credits extended to programme beneficiaries financed by the loan.

7. The DBM, NEB and each individual FI will establish and maintain a revolving fund in accordance with prudent banking guidelines to facilitate efficient and timely implementation of the microfinance credit activities, into which all net revenues from credits extended to programme beneficiaries financed through retail and wholesale credit by the loan will be deposited. The DBM, NEB and the FIs will use their respective revolving fund to fund further credits to programme beneficiaries in accordance with the loan agreement, at least until such date as will be specified in the relevant subsidiary agreement or, if no date is so specified, until all loan service payments have been made in full. For purposes of this paragraph, the term “net revenues” means all repayments of principal and all payments of interest, *less* reasonable operating and other costs.

8. By or before the commencement of programme implementation, MOF will prepare a detailed programme procurement schedule and submit it to IFAD for review, comment and approval.



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9. The Government will ensure that, prior to the commencement of programme implementation, the programme coordinating unit (PCU), Ministry of Agriculture (MOA), Ministry of Fisheries and Cooperatives (MOFC), Ministry of Women, Family Welfare and Child Development (MFWCD), DBM, NEB and the Ministry of Rodrigues/Rodrigues Island Administration will each open subprogramme accounts, denominated in Rupees, in an acceptable commercial bank, into which MOF will deposit, quarterly in advance, the loan proceeds and counterparts funds allocated in the AWPB to the components for whose implementation they are responsible.

10. The Government will ensure that any programme party (MOF, DEB, NEB, MOA, MOFC, MWRWCD, Ministry of Urban and Rural Development and the Ministry of Rodrigues/Rodrigues Island Administration) required to enter into an agreement/contract on behalf of the Government for this programme, will have the necessary authorizations to do so as required by the Government's national laws.

11. Within or before one year from the date of the loan agreement, the Government will issue regulations or other appropriate legal framework, satisfactory to IFAD, within the context of its existing laws concerning associations (Registration of Associations Act, RL 4/465, 3 January 1979) and cooperative societies (Cooperative Societies Act, RL 1/587, 1 December 1978). Such regulations will: (i) facilitate the registration of water user associations (WUAs); (ii) provide a means for the transfer of irrigation schemes to the WUAs; and (iii) accord water rights of those schemes to the WUAs in order that the programme may be implemented according to its design and the loan agreement. Moreover, the Government will ensure that the aforesaid legislation permit the WUAs to enter into legal agreements and other undertakings, and that they may be legally bound thereunder.

12. By or before the date that the loan is declared effective, the Government will ensure that it will make arrangements, satisfactory to IFAD, to ensure the timely and orderly delivery of extension services to irrigators supported by the programme, particularly for crop diversification, and that the Agricultural Research and Extension Unit of the MOA will deploy the full complement of staff to service the existing and newly-formed WUAs in the northern plains area.

13. The Government will ensure that the special non-programme linked DBM loan scheme for the microfinance credit activities will not be operative in the programme area; rather, in the programme area, the DBM and NEB rate will be linked to a viable rate of lending.

14. The Government will ensure that the relevant WUAs will have been constituted in accordance with the applicable laws and the WUAs will have undertaken to bear responsibility for the operation and maintenance (O&M) of the irrigation in-field system for the scheme, prior to commencing with the construction phase of individual irrigation schemes under the irrigated agriculture development subprogramme.

15. The Albion Fisheries Research Centre of the MOFC will conduct a FAD fish resource assessment study, commencing no later than the last quarter of 1999.

16. Within or before three years from the date of the loan agreement, the Government will have promulgated and made provisions for the enforcement of regulations governing the operation and sole use of FADs in the inner rings dedicated to licensed fisherman, covering the following:

- (i) the granting of authorizations, with such conditions as may be acceptable to IFAD, to all registered fishermen who apply for such, to fish around a FAD;
- (ii) guidelines for the conduct of FAD fishing operations;



- (iii) the exclusion of sports fishermen from the immediate vicinity of a FAD that is for the sole use of artisanal fishermen; and
 - (iv) the management of a FAD fishery.
17. Within or by one year from the effective date, the Government, through MOFC, will have introduced a monitoring, control and surveillance system for FADs with sufficient staff and equipment, accompanied by effective enforcement measures.
18. MOF will submit monitoring and evaluation reports to IFAD every six months covering programme implementation during that period.
19. Withdrawals not exceeding in the aggregate the equivalent of USD 500 000 may be made from the loan account in respect of eligible expenditures relating to vehicles, boats and equipment, technical assistance, training and studies, and community development investment funds, which expenditures may be incurred before the effective date but after approval of the loan by the fund's Executive Board. Such expenditures will be deemed eligible expenditures for all purposes of this agreement.
20. No disbursements will be made from the loan in respect of expenditures under the irrigated agriculture development subprogramme until such time as:
- (i) the Government will have introduced and made operational a rational schedule of irrigation water charges that will be financially sustainable, and will have introduced a revised procedure for pricing water, irrigation service fees and O&M charges; and
 - (ii) where the land to be irrigated is public land (i.e. owned by the Government), the Government will have issued land leases to the members of the WUAs who will be engaged in the new irrigation systems to be financed through the programme and who have applied for such leases, so that such individuals/groups may have security of land tenure and may undertake at least medium-term land improvements.
21. No disbursement will be made from the loan in respect of expenditures by DBM under the microenterprises/microfinance subprogramme until the Government, through MOF, will have concluded with DBM the DBM subsidiary agreement governing the operation and administration of the microfinance credit activities by DBM, which DBM subsidiary agreement will be acceptable to IFAD; the signature and performance thereof by the DBM and the Government will have been duly authorized or ratified by all necessary corporate, administrative and governmental action; and the Government will have provided a legal opinion, satisfactory to IFAD, attesting to the legally-binding nature of the DBM subsidiary agreement and its proper execution and approval/ratification.
22. No disbursements will be made from the loan in respect of expenditures by NEB under the microenterprises/microfinance subprogramme until such time as:
- (i) the NEB will have been duly incorporated under the Government's laws and the Government will have provided evidence (including, but not limited to, the NEB's articles of association/certificate of incorporation, by-laws, etc), satisfactory to IFAD, that NEB is capable of conducting the microfinance credit activities as required by the programme; and
 - (ii) the Government, through MOF, will have concluded with NEB the NEB subsidiary agreement, governing the operation and administration of the microfinance credit activities by NEB, which NEB subsidiary agreement will be acceptable to IFAD; the signature and performance thereof by the NEB and the Government will have been duly authorized or



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ratified by all necessary corporate, administrative and governmental action, and the Government will have provided a legal opinion, satisfactory to IFAD, attesting to the legally binding nature of the NEB subsidiary agreement and its proper execution and approval/ratification.

23. No disbursements will be made from the loan in respect of expenditures under the community development subprogramme for Mauritius and Rodrigues until the Government will have prepared and submitted to IFAD for its review and approval detailed guidelines and criteria for evaluation and approval of the community-based initiatives. The criteria will be based on an appraisal of sustainability and the social, technical and financial feasibility of the proposals.

24. No disbursements will be made from the loan in respect of expenditures under the community development subprogramme for Mauritius and Rodrigues, Community Development and Investment Funds, for disbursements or term credits for land-based improvement or activities, until the Government will, through the Rodrigues Island Administration, have issued land leases to individuals within community groups who will have applied for such leases.

25. The following are specified as additional conditions precedent to the effectiveness of the loan agreement:

- (a) the Government will have appointed a programme coordinator, acceptable to and approved by IFAD;
- (b) the Government will have established the PCU within MOF;
- (c) the Government will have duly opened the special account and programme account;
- (d) the Government will have established the programme steering committee, composed of the members and with terms of reference satisfactory to IFAD;
- (e) the MOF will have submitted to IFAD, and IFAD will have approved, the programme implementation manual;
- (f) the loan agreement will have been duly signed and the signature and performance thereof by the Government will have been duly authorized and ratified by all necessary administrative and governmental action; and
- (g) a favourable legal opinion, issued by the Government's Attorney-General or other legal counsel approved by IFAD, in form and substance acceptable to IFAD, will have been delivered by the Government to IFAD.



COUNTRY DATA MAURITIUS

Land area (km² thousand) 1995 1/	2	GNP per capita (USD) 1995 2/	3 380
Total population (million) 1996 1/	1	Average annual real rate of growth of GNP per capita, 1990-96 2/	3.6
Population density (people per km²) 1996 1/	560	Average annual rate of inflation, 1990-96 2/	6.5
Local currency	Mauritian Rupee (MUR)	Exchange rate: USD 1 =	MUR 24
Social Indicators		Economic Indicators	
Population (average annual population growth rate) 1980-96 1/	1.0	GDP (USD million) 1996 1/	4 292
Crude birth rate (per thousand people) 1996 1/	18	Average annual rate of growth of GDP 1/ 1980-90	6.2
Crude death rate (per thousand people) 1996 1/	7	1990-96	5.0
Infant mortality rate (per thousand live births) 1996 1/	17	Sectoral distribution of GDP, 1996 1/	
Life expectancy at birth (years) 1996 1/	71	% agriculture	9.7
Number of rural poor (million) 1/	n.a.	% industry	32.1
Poor as % of total rural population 1/	n.a.	% manufacturing	23.3
Total labour force (million) 1996 1/	0	% services	58.2
Female labour force as % of total, 1996 1/	31.8	Consumption, 1996 1/	
Education		General government consumption (as % of GDP)	9.8
Primary school gross enrolment (% of relevant age group) 1995 1/	107.0	Private consumption (as % of GDP)	68.3
Adult literacy rate (% of total population) 1995 3/	82.9	Gross domestic savings (as % of GDP)	21.9
Nutrition		Balance of Payments (USD million)	
Daily calorie supply per capita, 1995 3/	2 886	Merchandise exports, 1996 1/	1 699
Index of daily calorie supply per capita (industrial countries=100) 1995 3/	91	Merchandise imports, 1996 1/	2 255
Prevalence of child malnutrition (% of children under 5) 1990-96 1/	15.0	Balance of merchandise trade	- 556
Health		Current account balances (USD million)	
Health expenditure, total (as % of GDP) 1990-95 1/	3.4	before official transfers, 1996 1/	- 106
Physicians (per thousand people) 1994 1/	0.8	after official transfers, 1996 1/	17
Percentage population without access to safe water 1990-96 3/	2	Foreign direct investment, 1996 1/	37
Percentage population without access to health services 1990-95 3/	0	Government Finance	
Percentage population without access to sanitation 1990-96 3/	0	Overall budget surplus/deficit (including grants) (as % of GDP) 1995 1/	-1.2
Agriculture and Food		Total expenditure (% of GDP) 1995 1/	22.6
Food imports as percentage of total merchandise imports 1996 1/	16.4	Total external debt (USD million) 1996 1/	1 818
Fertilizer consumption (hundreds of grams per ha of arable land) 1994-96 1/	3 037	Present value of debt (as % of GNP) 1996 1/	45.1
Food production index (1989-91=100) 1994-96 1/	104	Total debt service (% of exports of goods and services) 1996 1/	7.2
Land Use		Nominal lending rate of banks, 1996 1/	20.8
Agricultural land as % of total land area, 1994 4/	55.7	Nominal deposit rate of banks, 1996 1/	10.8
Forest area (km ² thousand) 1995 1/	0		
Forest area as % of total land area, 1995 1/	5.9		
Irrigated land as % of cropland, 1994-96 1/	17.0		

n.a. not available.

Figures in italics indicate data that are for years or periods other than those specified.

1/ World Bank, *World Development Report*, 1998

2/ Human Development Report, UNDP, 1998

3/ UNDP, *Human Development Report*, 1998

4/ World Bank, *The World Development Indicators CD-ROM*, 1998

PREVIOUS IFAD LOANS TO MAURITIUS

Project Name	Loan No	Cooperating Institution	Appraisal	Board Approval	Agreement	Loan Effectiveness	Original Closing Date	Times Extended	Extended Closing Date	Total Project costs at Appraisal	IFAD Loan	Borrowers Contribution	Beneficiary Contribution	Loan Disbursement Rate
Small-Scale Agricultural Development Project	078-MT	IDA	March 1981	Dec 1981	July 1982	May 1983	June 1987	2	Dec 1991	(mill.USD) 8.71	(mil USD) 6.3	(mil USD) 1.7	(mil USD) 0.7	100%



LOGICAL FRAMEWORK

OVERALL OBJECTIVE	Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Critical Assumptions and Risks
PURPOSE (general objective)	<p>To enable them to diversify and improve the magnitude and reliability of household incomes derived from agriculture, micro-enterprises and fisheries activities</p> <p>1. Irrigated Agriculture 1.1 Improvement in the magnitude and reliability of 1160 farm households incomes through improved agricultural productivity and output; 1.2 Rehabilitation of 250 ha and development of 150 ha of new irrigated land using demand driven participatory approaches; 1.3 Enhanced institutional capacities and capabilities of government staff and farmers to jointly design, plan, implement and operate and maintain small-scale irrigation schemes.</p> <p>2. Micro-enterprise & Micro-finance Development 2.1 Enhance low-skill/low income women's capacities to generate self-employment based income; 2.2 Build up technical and management capacities in the MFWCD Women Entrepreneur Unit and Field Support Teams to provide technical and business services to the target group 2.2 Boost the long-term profitability and growth of about 2200 existing and new rural micro-enterprises and; 2.3 Expand the outreach and delivery of rural micro-financial services to the target groups.</p> <p>3. FAD Fisheries 3.1 Reduce pressure on Mauritius's lagoon fishing resources; 3.2 Improve the incomes of some 390 fisherfolks and 130 fisherfolks in Mauritius and Rodrigues and; 3.3 Launch feasibility study of seaweed to improve the incomes of Rodriguan women presently involved in octopus fishery</p> <p>4. Participatory Community Development- Rodrigues 4.1 Improve the livelihoods of about 60 rural communities through appropriate, viable and sustainable community micro-investments in economic and social infrastructure and group initiatives 4.2 Enhance the technical and managerial capacities of the Ministry of Rodrigues/Island Administration, local NGOs and communities to plan and implement participatory, community-based development activities.</p> <p>5 Participatory Community Development- Mauritius 5.1 Improve the livelihoods of marginalized communities in Mauritius through support of appropriate, viable and sustainable micro-investments in socio-economic infrastructure and group initiatives; 5.2 Enhance the technical and managerial capacities of the MFWCD, MURD, NGOs and communities to plan and implement participatory, community-based development activities.</p>	<p>Measures of household income/consumption desegregated by income/target group</p> <p>1.1 Farm production surveys; 1.1 Household income - expenditure surveys; 1.2 Nos. of schemes & ha consolidated & Nos. of new schemes & ha developed; 1.2 Nos. of registered and operating WUAs with bank accounts; 1.3 Nos. of IA staff trained in participatory approaches; 1.3 Nos. of scheme management responsibilities transferred to WUAs</p> <p>2.1 Household income - expenditure studies; 2.1 Micro-enterprise production surveys; 2.1 Nos. of training programmes developed & implemented; 2.2 Household income - expenditure studies 2.2 Micro-enterprise production surveys; 2.2 Nos. of training programmes developed & implemented; 2.3 Growth of savings & loan portfolios; 2.3 Portfolio performance; 2.3 Operating efficiency ratio</p> <p>3.1 Nos. of fisherfolk relocated to FAD fishery; 3.1 Nos. of compensation packages extended; 3.1 Nos. of FADs made and positioned; 3.2 Nos. of fisherfolk trained in FAD fishery; 3.3 Nos. of fisher women adopting alternative employment opportunities.</p> <p>4.1 Nos. of completed community micro-projects; 4.1 Nos. of CICs established; 4.1 Functional O&M arrangements; 4.2 Nos. of training programmes developed & implemented; 4.2 Nos. of staff, beneficiaries and NGO staff trained 4.2 Functional Management & financial management arrangements.</p> <p>5.1 Nos. of completed community projects; 5.1 Nos. of CICs established; 5.1 Functional O&M arrangements 5.2 Nos. of training programmes developed & implemented; 5.2 Nos. of beneficiaries and NGO staff trained 5.2 Functional management capacities; organisational, financial management</p>	<p>Periodic Income-Expenditure Surveys</p> <p>1.1 Contact farmer monitoring; 1.1 Household income - expenditure surveys; 1.2 Scheme surveys; 1.3 Sub-Programme progress reports; 1.3 Supervision reports; Mid-Term Review; Programme completion report;</p> <p>2.1 Household income - expenditure surveys; 2.1 Contact micro-entrepreneur monitoring; 2.1 Supervision reports, MTR report, Programme Completion report; 2.2. Programme Progress reports, Supervision reports; 2.3. CCU financial reports, DBM Progress reports, Supervision reports. 3.1 Programme progress reports, supervision reports, MTR report; 3.2 Programme progress reports, supervision reports, MTR report.</p> <p>3.3 Contact fisher women monitoring, Programme progress reports, supervision reports, MTR report.</p> <p>4 Programme progress reports, Participatory Impact Evaluations, Local Planning Information System, Supervision reports; MTR report.</p> <p>5. Programme progress reports, Participatory Impact Evaluations, Local Planning Information System, Supervision reports; MTR report</p>	<p>(Goal to Supergoal) Favourable macro-economic environment continues</p> <p>(Purpose to Development objective) Programme outputs will raise productivity and increase beneficiaries incomes. Continued Government commitment to participatory demand-led irrigation development. Smallholders willingness to contribute to O&M and de-rocking costs. Smallholders accept WUA concept & O&M responsibility. Institutional legal framework for WUA developed. Continued preferential sugar protocol. Application of positive interest rates. Implementation not constrained by inadequate staff performance. Implementation performance not constrained by administrative restructuring.</p> <p>Micro-project identification conducted according to transparent criteria.</p>





	Narrative Summary	Objectively Verifiable Indicators	Means of verification	Critical Assumptions and Risks
OUTPUTS	<p>1. Irrigation & Agricultural Diversification 1.1 Some 250 ha of small irrigation schemes rehabilitated/modernized; 1.2 Some 150 ha of new small-scale irrigation schemes developed; 1.3 Up to eight WUAs established, and their management and organizational skills improved; 1.4 Reliable and increased irrigation water provided; 1.5 Irrigated agricultural and horticultural production improved; 1.6 Crop intensities and yields of cane and vegetables increased; 1.7 Farmers' and support staff's farm management skills improved; 1.8 Managerial and technical capacities of IA and AREU staff to implement participatory small-scale irrigation schemes improved; 1.9 Programme management systems and coordination mechanisms developed.</p> <p>2. Microenterprise & Microfinance Development 2.1 Working and investment capital provided and the skills of microentrepreneurs improved, 2.2. Complementary income-generating skills training provided; 2.3 Provision of marketing services to new microentrepreneurs; 2.4 Operational framework and procedures for CCUs developed; 2.5 Operational framework and procedures for FIs developed; 2.6 Credit provided; 2.7 Programme management systems and coordination mechanisms developed.</p> <p>3. FAD Fisheries 3.1 Compensation plan packages provided; 3.2 60 FADs positioned over the six-year period; 3.3 171 new fishing boats financed and operational 3.4 FAD fishing training programmes conducted; 3.5 Programme management systems and coordination mechanisms developed.</p> <p>4. Participatory Community Development 4.1 Community development funds financial investment facility established; 4.2 Financial training facility established; 4.3 Training programmes for NGOs and beneficiaries conducted; 4.4 Enabling environment for community development at grass-roots level developed; 4.5 Programme management systems and coordination mechanisms developed</p>	1.1 No. of WUAs established; No. of farmers trained; 1.2 No. of completed schemes; 1.3 No. of WUAs having assumed full responsibility for O&M; 1.4 Volume of water received; 1.5 Cropping intensities; 1.6 Farm production levels; 1.7 No. of training sessions compared to AWP targets; 1.8 On-schedule implementation of AWP/Bs 1.9 MIS established, AWP/B and reporting documentation timely prepared. 2.1 No. of training programmes developed and implemented compared to AWP targets; 2.2 On-schedule provision of educational and marketing services; 2.3 On-schedule provision of marketing outlets; 2.4 Operations procedures and systems prepared and distributed; 2.5 On-schedule opening of account; disbursement rates; 2.6 On-schedule opening of account; 2.6 Disbursement rates; 2.7 On-schedule implementation of AWP/Bs; 2.7 MIS established, AWP/B and reporting documentation timely prepared. 3.1 No. of compensation packages provided compared to AWP targets; 3.1 Loan repayment rates; 3.2 No. of positioned FADs 3.3 No. of training sessions conducted compared to AWP targets; 3.4 On-schedule implementation of AWP/Bs; 3.4 MIS established, AWP/B and reporting documentation timely prepared. 4.1 On-schedule opening of account and disbursement rate; 4.2 On-schedule opening of account and disbursement rates; 4.3 No. of training programmes developed vs. AWP targets; 4.3 No. of training sessions conducted vs. AWP targets; 4.4 Degree of involvement of beneficiaries and no. of new comm. initiatives implemented; 4.5 On-schedule implementation of AWP/Bs; 4.5 MIS established, AWP/B and reporting documentation timely prepared.	1.1 Progress reports, supervision report, mid-term review (MTR) report, programme completion report; 1.2 Progress reports, supervision report, MTR report, programme completion report; 1.3 Progress reports, supervision reports, MTR report, programme completion report 1.5 - Six Farm production surveys 1.7 - Nine progress reports, supervision report, MTR report, programme completion report; 2.1 - 2.3 Programme progress reports, supervision report & MTR report, programme completion report; 2.4 Receipt of manuals; 2.5 - 2.7 Programme progress reports, Supervision report & MTR report, programme completion report; 3.1- 3.4 Programme progress reports, supervision report & MTR report, programme completion report; 4.1 Supervision report 4.2 Supervision report 4.3-4.5 Project progress reports, supervision report & MTR report, participatory impact evaluations, microproject completion reports.	<p>Outputs to Development Objective) Farmers motivated to form WUAs. Farmers adopt demonstrated technologies.</p> <p>Beneficiary demand signals are transmitted uninterrupted.</p> <p>Marketing potential for small-scale enterprises continues to strengthen</p> <p>Continued demand for credit facilities.</p> <p>Timely procurement of goods and services.</p> <p>Continued demand for community development.</p>

	Narrative summary	Objectively Verifiable Indicators	Means of verification	Critical Assumptions and Risks
ACTIVITIES	<p>1.A Irrigation Development 1.1 Farmer needs assessment; 1.2 Community mobilization and sensitization; 1.3 Formation of WUAs; 1.4 Scheme identification survey; 1.5 Design; 1.6 Planning; 1.7 Preparation of cost estimates; 1.8 Construction; 1.9 Training of WUAs.</p> <p>1.B Agricultural Diversification & Intensification 1.1 Strengthening of FSC & AREU' s human resources; 1.2 Training in management of groups; 1.3 Technical training; 1.4 On-farm trails; 1.5 Line of credit: (a) de-rocking and (b) in-field irrigation equipment; 1.6 Programme management and coordination.</p> <p>2. Microenterprise Support 2.1 Strengthening of MACOSCLE and credit union system; 2.2 Development of informal group network; 2.3 Educational support to informal groups; 2.4 Establish community credit union fund; 2.5 Establish fund for credit to women and microentrepreneur groups; 2.6 Programme management and coordination.</p> <p>3. Development of FAD Fishing 3.1 Awareness campaign; 3.2 Training of trainers; 3.3 Monitored fishing; 3.4 Institutional strengthening of Fisheries Protection Service (FPS); 3.5 Provide credit line; 3.6 Surveillance and monitoring by FPS; 3.5 Programme management and coordination.</p> <p>4. Community Development 4.1 Inception workshop; 4.2 Baseline survey; 4.3 Establishment of local planning information system; 4.4 Strengthening of stakeholder human resources; 4.5 Promotion, sensitization and mobilization of communities; 4.6 Identification of projects; 4.7 Formulation and design; 4.8 Appraisal and funding; 4.9 Training of community management committees; 4.10 Programme management and coordination; 4.11 Participatory impact evaluations; 4.12 Annual review workshops; 4.13 Microproject completion evaluations.</p> <p>5. Overall Programme Management & Coordination Coordination and strategic policy guidance; Continuous M&E.</p>	<p>1 - 5 Activities undertaken according to project implementation plan and AWP/B</p> <p>1 - 5 Timely submission of: AWP/B, withdrawal applications, progress reports, audit reports and procurement documentation.</p>	<p>AWP/B, quarterly, semi-annual and annual progress reports, supervision mission reports, MTR report</p>	<p>Government staff committed to participatory demand-led implementation approach</p>

	Narrative summary	Objectively Verifiable Indicators	Means of verification	Critical Assumptions and Risks
INPUTS	<p>1. Irrigated Agriculture Development-USD 3 728 000 (25% of base cost) Funds for vehicles & motorcycles Funds for construction & office equipment Funds for technical assistance Funds for recurrent expenses Funds for training of IA and AREU staff Funds for training of WUA managing committee members</p> <p>2. Microenterprise & Microfinance Development-USD 2 179 000 (15% of base cost) Funds for vehicle & motorcycles Funds for office equipment Funds for credit for women entrepreneurs Funds for technical assistance Funds for recurrent expenses Funds for training of DBM staff Funds for training of CCU managing committee members</p> <p>3. Development of FAD Fisheries USD 4.158,000 (28%) Funds for vehicle & motorcycles Funds for fishing & office equipment Funds for technical assistance Funds for recurrent expenses Funds for training of MOFC staff Funds for training of trainers</p> <p>4. Participatory Community Development: Rodrigues & Mauritius- USD 3 691 000 (25%) Funds to finance microprojects Funds for complementary technical assistance and support to microprojects Funds for vehicles and motorcycles Funds for office equipment Funds for operating costs Funds for training of NGOs Funds for training of CICs Funds for local planning information system Funds for annual review workshops Funds for two participatory impact evaluations Funds for completion evaluations</p> <p>Programme Coordination & Institutional Support-USD 969 000 (7%) Funds for technical assistance Funds for M&E system</p> <p>TOTAL BASELINE PROJECT COST: USD 14 725 000</p>	<p>Quantities procured and utilized Quantities procured and utilized No. of man months completed Amount of funds No. of days spent in field No. of training courses completed No. of training courses completed</p> <p>Quantities procured and utilized Quantities procured and utilized No. of man months completed Amount of funds No. of training courses completed</p> <p>Quantities procured and utilized Quantities procured and utilized No. of man months completed Amount of funds No. of days spent at sea No. of training courses completed No. of training courses completed</p> <p>Quantities procured and utilized Quantities procured and utilized Amount of funds No. of training courses completed No. of training courses completed Local planning information system Baseline survey No. of review workshops No. of completed PIEs report No. of evaluations No. of man months completed M&E system</p>	<p>AWP/B, quarterly, semi-annual & annual progress reports, supervision mission reports, MTR report</p>	<p>Timely procurement of goods and services</p> <p>Government commitment to demand-led development</p> <p>Timely government and beneficiary counterpart funding</p>



COSTS AND FINANCING

Expenditure Accounts Programme Cost Summary

	(MUR '000)					(USD '000)				
	Local	Foreign	Total	%	% Total	Local	Foreign	Total	%	% Total
				Foreign Exchange	Base Costs				Foreign Exchange	Base Costs
I. Investment Costs										
A. Civil Works										
1. Irrigation civil works	13 403	4 468	17 871	25	5	545	182	727	25	5
2. Office building	2 884	1 236	4 120	30	1	117	50	168	30	1
Subtotal Civil Works	16 287	5 704	21 991	26	6	662	232	894	26	6
B. Vehicles and Equipment										
1. Vehicle	1 721	4 654	6 376	73	2	70	189	259	73	2
2. Boats	9 415	17 485	26 901	65	7	383	711	1 094	65	7
3. Irrigation equipment	7 416	22 248	29 664	75	8	302	905	1 206	75	8
4. Other equipment and material	1 950	10 630	12 579	85	3	79	432	511	85	3
Subtotal Vehicles and Equipment	20 502	55 017	75 520	73	20	834	2 237	3 070	73	20
C. TA, Training and Studies										
1. Technical Assistance										
International	2 160	15 277	17 437	88	5	90	621	711	87	5
National	13 704	36	13 740	-	4	557	1	559	-	4
Subtotal Technical Assistance	15 864	15 313	31 177	49	8	647	623	1 270	49	8
2. Training	21 100	9 497	30 597	31	8	858	386	1 244	31	8
3. Studies and support services	16 402	16 828	33 230	51	9	667	684	1 351	51	9
Subtotal TA, Training and Studies	53 366	41 638	95 004	44	25	2 172	1 693	3 865	44	25
D. Funds										
1. Community investments	50 099	12 525	62 624	20	17	2 037	509	2 546	20	17
2. Fishing licence surrender	38 249	-	38 249	-	10	1 555	-	1 555	-	10
3. Credit	14 068	9 035	23 103	39	6	572	367	939	39	6
Subtotal Funds	102 416	21 560	123 976	17	33	4 164	877	5 040	17	33
Total Investment Costs	192 571	123 919	316 490	39	85	7 831	5 038	12 869	39	85
II. Recurrent Costs										
A. Staff Salaries	32 655	124	32 779	-	9	1 328	5	1 333	-	9
B. Operation and maintenance	15 814	8 085	23 899	34	6	643	329	972	34	6
Total Recurrent Costs	48 469	8 209	56 678	14	15	1 971	334	2 304	14	15
	241 040	132 128	373 168	35	100	9 802	5 372	15 173	35	100
Physical contingencies	5 571	4 997	10 568	47	3	226	203	430	47	3
Price contingencies	47 494	24 009	71 504	34	19	644	326	970	34	6
	294 105	161 134	455 239	35	122	10 672	5 900	16 573	36	109



Disbursement Accounts by Financiers

(USD '000)

	IFAD		Beneficiaries		Financial Intermediaries		Government		Total		For. Exch.	Local (Excl. Taxes)	Duties and Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
A. Civil Works	896	91.4	19	2.0	-	-	65	6.6	980	5.9	254	684	42
B. Vehicles, Boats and Equipment													
1. Vehicles	194	73.0	-	-	-	-	72	27.0	266	1.6	194	-	72
2. Boats	1 028	90.0	-	-	-	-	114	10.0	1 142	6.9	743	286	114
3. Equipment	1 751	93.0	39	2.0	-	-	94	5.0	1 884	11.4	1 464	326	94
Subtotal Vehicles & Equipment	2 974	90.3	39	1.2	-	-	280	8.5	3 292	19.9	2 401	611	280
C. Technical Assistance, Training & Studies													
1. Technical Assistance (TA)													
International TA	778	100.0	-	-	-	-	-	-	778	4.7	688	90	-
Local TA	560	90.0	-	-	-	-	62	10.0	622	3.8	2	558	62
Subtotal Technical Assistance (TA)	1 337	95.6	-	-	-	-	62	4.4	1 399	8.4	689	648	62
2. Training	850	62.3	-	-	-	-	515	37.7	1 365	8.2	424	907	34
3. Studies and support services	1 487	94.8	-	-	-	-	81	5.2	1 568	9.5	794	693	81
Subtotal Technical Assistance, Training & Studies	3 674	84.8	-	-	-	-	659	15.2	4 332	26.1	1 907	2 248	178
D. Funds													
1. Community development investment funds	2 211	80.0	276	10.0	-	-	276	10.0	2 764	16.7	553	1 934	276
2. Microfinance credit activities	951	95.0	-	-	-	-	50	5.0	1 001	6.0	392	560	50
3. Fishing licence surrender	-	-	-	-	-	-	1 618	100.0	1 618	9.8	-	1 618	-
Subtotal Funds	3 162	58.7	276	5.1	-	-	1 945	36.1	5 383	32.5	944	4 112	326
E. Operating Costs													
1. Staff salaries	412	28.6	-	-	59	4.1	967	67.3	1 438	8.7	6	1 288	144
2. Operation and maintenance	-	-	225	19.6	130	11.3	792	69.0	1 148	6.9	389	628	131
Subtotal Operating Costs	412	15.9	225	8.7	189	7.3	1 759	68.1	2 585	15.6	395	1 915	275
Total	11 117	67.1	559	3.4	189	1.1	4 708	28.4	16 573	100.0	5 900	9 571	1 101



ORGANIZATION AND MANAGEMENT

1. Project design will be based on a demand-driven approach. Ultimate implementation responsibilities will rest with the beneficiaries in collaboration and cooperation with the public and private sectors and civil-society organizations, including NGOs. The role of the Government will be that of a facilitator, regulator, supervisor and monitor. MOF will play a key role within this framework, in terms of providing strategic policy direction, guidance and coordination, including fund disbursement, and it will be assisted by MEDPRD in the planning and M&E of the entire programme. To the extent possible, responsibility and accountability will be decentralized, whereby each of the administrative ministries/departments will be responsible, under the overall coordination of PSC, for carrying the functions and activities related to their domain. The key implementation ministries will include MOA, specifically IA and AREU; MOFC, specifically FPS and AFRC; MFWCD, MURD and the Ministry of Rodrigues/Rodrigues Island Administration. DBM and NEB will be responsible for the on-lending of credit to microenterprises and FAD fisheries, both directly and through the financial intermediaries.

A. Programme Organization and Management

2. A PCU will be established within MOF both to oversee and facilitate implementation and to carry out programme M&E functions. PCU's major functions will include: compilation and preparation of AWP/Bs, procurement, disbursement of funds, preparation of quarterly and annual reports, and acting as PSC secretariat. Coordination of ministerial agencies and NGOs will be ensured by a PSC to be constituted with appropriate terms of reference under MOF, with representatives of the implementing agencies, beneficiaries and NGOs. Major donors such as EU, France, India, Japan, United Kingdom, UNDP and United States, will also be represented to ensure donor complementarity and avoid duplication of aid resources. The members' main responsibilities will be to assist and facilitate the work of implementing agencies in accordance with the policy guidelines of PSC. Other functions will include: (i) formulation of plans and policy, and inter-sectoral and donor coordination; (ii) review and confirmation of major appointments; (iii) review and approval of the AWP/B and procurement actions; (iv) review, approval and follow-up of decisions on audit and progress and supervision reports; and (v) delegation and decentralization of authority, as and when necessary, to ensure rapid implementation and disbursements, etc.

3. The PCU will be headed by a programme coordinator supported by a locally-recruited finance officer, an M&E officer and general support staff. The programme coordinator will be responsible for the operation of the Special Account, and will act as the focal point for contacts with the cooperating institution and IFAD.

4. Implementation of individual subprogrammes will be the responsibility of the following ministries and agencies:



APPENDIX V

Ministries	Subprogrammes
Ministry of Agriculture	<ul style="list-style-type: none"> - Irrigated Agricultural Development: by Irrigation Authority (IA) - Extension by AREU
Ministry of Fisheries and Cooperatives	<ul style="list-style-type: none"> - FAD Fisheries Development: Fisheries Division
Ministry of Women Family Welfare and Child Development, in collaboration with the Ministry of Urban and Rural Development	<ul style="list-style-type: none"> - Community Development - Mauritius - Microenterprise and Microfinance
Ministry of Rodrigues through the Island Administration	<ul style="list-style-type: none"> - Community Development, Rodrigues
Ministry of Finance	<ul style="list-style-type: none"> - Inter-agency coordination, AWP/B, disbursement, procurement by PCU
Ministry of Economic, Development, Productivity and Regional Development	<ul style="list-style-type: none"> - Monitoring, evaluation and studies

5. In order to expedite and decentralize implementation responsibilities, two lower-level management teams - JPIU and PIC will be set up to execute and synergize the subprogrammes for community development on Mauritius Island and microenterprise/microfinance, respectively, both of which will serve a similar target area but with complementary deliveries of economic infrastructure and income-generating resources. A common financial controller within JPIU will also ensure the application of proper accounting procedures and practices for the two subprogrammes. Secondly, a PMUR will be set up in Rodrigues to coordinate implementation activities for that island, including fisheries, agriculture, and community development. The procedures for completing AWP/Bs for individual subprogrammes and their subsequent integration by PCU into an overall AWP/B for the programme confers both flexibility and ability to change direction in light of emergent results, as well as an opportunity for beneficiary dialogue. Because of the importance the AWP/B has in programme orientation, an assurance will be sought from the Government during loan negotiations that MOF will submit the AWP/B to IFAD and the cooperating institution for review before finalization.

B. Implementation Arrangements

Irrigated Agricultural Development

6. The IA within MOA will be the lead agency for implementation of the irrigation subprogramme, assisted by the WUAs, selected NGO and AREU, which will be responsible for farm extension for non-cane crops. Private-sector contractors will carry out the civil works. Derocking will be carried out by the Sugar Plantations Mechanical Pool Corporation or by private contractors.

7. As lead agency for this subprogramme, IA will be responsible for rehabilitation and renovation of the 250 ha of existing small-scale irrigation schemes and for developing 150 ha of new small-scale schemes. The criteria for the selection and development of new irrigation project sites have been incorporated into a six-stage process involving basic feasibility studies, dialogue and implementation. The first stage will begin with a preliminary feasibility assessment based on project proposals received from the beneficiaries. Potential beneficiaries will not be engaged during the initial stage so as to avoid raising expectations prematurely. Most the work at this stage will be carried out by IA at relatively low cost and using secondary information. The second stage will involve discussions with potential beneficiaries regarding alternative design options and costs. The third stage will involve a formal socio-economic survey by a specialized independent contractor/NGO to ensure that the large majority of farmers who should benefit from the scheme constitute a suitable target group, and that they will have sufficient incentive to participate in the project. This will be followed, in the fourth stage, by the preparation of detailed engineering designs taking into account farmer preferences. During the fifth stage, beneficiaries will enter into a formal agreement with IA, stipulating the obligations of Government and farmers. At this stage, farmers will be required to demonstrate that they have the means to finance their share of the investments, either with their own resources or using



(project-financed) credit from DBM and NEB. The sixth and final stage will involve the construction of new schemes and training of farmers and WUAs. The major functions of IA will consist of: (i) contracting local NGOs for the formation of groups, training, and providing support to the WUAs; (ii) preparing preliminary designs for irrigation works, drawing up and executing contracts with local private civil-works contractors, supervising implementation of civil works, carrying out procurement-related activities and O&M of the out-field irrigation system¹; (iii) overall M&E; (iv) assisting in the collection of water rates and irrigation charges from WUAs and other beneficiaries; (v) planning, preparation of AWP/Bs, drawing up agreements with WUAs and arranging for phased transfer to WUAs of irrigation system field equipment; and (vi) carrying out initial surveys, design and cost estimates, either with its own staff or through local consulting firms. Local NGOs will be contracted by the communication development officer of IA to assist in the formation and support of WUAs, one for each scheme or irrigation block. The NGOs will provide leadership training and strengthen group management skills, carry out PRA surveys and studies, and assist in supervision.

8. As beneficiary groups, WUAs will play a key role in irrigation development and be responsible for O&M of in-field systems, equipment and irrigation works. The WUAs will be actively involved in all decision-making processes, from system design to implementation. Their agreement to bear responsibility for O&M of their irrigation in-field system will be a condition of disbursement for the relevant irrigation block or scheme. To become eligible for assistance, all irrigator groups will need to be registered as WUAs or have equivalent legal status.

9. The Agricultural Research and Extension Unit will be responsible for non-sugar cane crop extension, on-farm technology testing, and dissemination of improved production packages and market situation reports to farmers. To this end, it will collaborate with the Farmer Service Centre.

Fisheries Development

10. The MOFC will be responsible for implementing the fisheries subprogramme through the Permanent Secretary for Fisheries. The latter will ensure active cooperation and coordination between the two major implementing agencies, FPS and AFRC, together with the National Coast Guard, the Harbour Authority, the Ministry of Tourism and the Director of Shipping of the Ministry of Transport. DBM and NEB will be responsible for providing credit for the purchase of fishing boats and equipment; priority for such loans will be given to registered fishermen under the programme. However, other potential investors may receive loans provided they meet agreed selection criteria as conditions for loan eligibility. The major implementation responsibilities of other participating agencies, including beneficiaries, will be as follows:

- (a) Albion Fisheries Research Centre will be mainly responsible for: (i) prior assessment and monitoring of the proposed development of FAD fisheries; (ii) implementation of the training programme at Trou Fanfaron for fishermen who enter into loan agreements with DBM for the purchase of fishing boats or who may be recruited as assistant fishermen for FAD fisheries; and (iii) construction, maintenance and placement of FADs and technical innovations for FADs.
- (b) The FPS will be responsible for enforcing the Fisheries Act and the Environment Act, in cooperation with other ministries. Monitoring, control, surveillance and enforcement of FAD fisheries will be carried out by FPS. In addition to enforcing fishing regulations, the responsibilities of FPS will also include registration of fishermen and fishing boats, collection of catch data, extension of technical assistance, training, implementation of the lagoon monitoring programme, and reporting weather data to the Meteorology Centre. The present national legal framework for monitoring, control and surveillance does not

¹ Weir, pumping station, main and sub-main pipelines.



APPENDIX V

cover FADs. The Government will need to ensure that there is an adequate legal basis to restrict access to FAD fisheries through authorizations/licences; limit the number of FADs to be deployed; and establish a system of FADs (an inner ring) within the territorial sea area that will be for the sole use of artisanal fishermen. Appropriate regulatory framework conditions will be put in place for the proper development of FAD fisheries.

- (c) Fishermen and women participating in FAD fisheries will, to the extent possible, be involved in management decisions about the fishing regime. Specifically, beneficiaries will be involved in: (i) monitoring the conditions of FADs; (ii) reporting the presence of unauthorized activities in the vicinity of FADs; (iii) reporting any interference by maritime traffic; (iv) minor maintenance of FADs; (v) the decision process for deployment of FADs; (vi) technical development of FADs; (vii) participation in regular discussions with the administration about fishery management; and (viii) contributions to FAD annual maintenance costs through a common maintenance fund, with the Government meeting the balance of needed annual costs.

Microenterprises and Microfinance

11. Within the overall framework of the PCU and under the supervision and guidance of PSC, this subprogramme will be implemented by MFWFCD, DBM and NEB. Implementation will be coordinated by the PIC, to be constituted under the chairmanship of the Permanent Secretary of MFWFCD with representatives from concerned agencies. The WEU, which will be strengthened through the support facilities of the subprogramme, will be the key unit for development of microenterprises. Five EDOs will be recruited and trained for this purpose. A microenterprise evaluation committee (MEEC) will be established within WEU with the following members: head of WEU, chairman; EDO/MEEC, secretary; and representatives of DBM, NEB, financial intermediaries and WEU technical divisions as members. The responsibilities of MEEC will be to: (i) draw up guidelines/eligibility criteria for microenterprise proposals; (ii) ensure identification and selection of target clients; (iii) consider the proposals of EDOs on a case-by-case basis and suggest measures to improve the quality/viability of the proposals; (iv) recommend feasible proposals to DBM, NEB and financial intermediaries for loan approval, sanction and disbursement; (v) deal with special problems of assisted enterprises; and (vi) review periodic monitoring reports. The recommendations of MEEC will be reviewed by PIC.

12. The MEEC will meet periodically, and evaluate applications received from the field and the financial intermediaries. Under subsidiary loan agreements, DBM and NEB will have lead responsibility for microfinance operations and mainly administer wholesale credit through: (i) five CCUs selected on the basis of agreed eligibility criteria; and (ii) an international NGO contracted to provide consultancy services in developing rural financial services. Its retail operations will be managed by the Agricultural Department (Microcredit Cell). The subprogramme will support the mobilization of consultancy services from an accredited international NGO.

13. DBM and NEB will provide wholesale credit funds in tranches (based on the recommended proposals submitted through MEEC) to the accredited international NGO, on suitable terms and conditions to be determined at the time of appraising the proposals received from them. A similar procedure will be followed with respect to extending loans from DBM and NEB to other financial intermediaries (CCUs) for their retail credit operations. The financial intermediaries will be selected on the basis of various performance indicators, including overall objectives of lending, present capital adequacy and liquidity ratios, return to equity, annual financial margin and availability of other support services. Most of the credit will be provided on the basis of term loans, with a viable rate of interest to be determined annually based on a review carried out by the Government and IFAD. The interest rate among the subsectors will be allowed to vary to ensure viability of the subprogramme



activities Necessary revolving funds will be established in DBM, NEB and financial intermediaries, in accordance with prudent bank guidelines to facilitate efficient and timely implementation. The FI's will use appropriate financial analysis methods for investment decisions to approve its subloans to beneficiaries, such as the internal rate of return, net return on equity, a cut-off-rate for accepting or rejecting proposals and other measures as applicable. The Government will bear the foreign exchange risk of the loans to be provided to DBM and NEB.

Community Development

14. **Mauritius.** MFWWCD will be the lead agency for implementation of the community development subprogramme in Mauritius, with technical support from MURD field officers. A JPIU within MFWWCD will have overall responsibility for programme coordination and management, while implementation will be entrusted to communities, local organizations and NGOs. MFWWCD will either recruit or reassign an experienced senior candidate as programme coordinator, assisted by a deputy programme coordinator and a financial controller. A programme technical committee (PTC), comprising representatives of MFWWCD, MURD, MEDPRD and civil-society organizations, will be established with responsibility for reviewing proposed community-based initiatives. Detailed guidelines and criteria for evaluation and approval of the community-based initiatives will be prepared prior to programme start-up and presented for approval of the PTC, the cooperating institution and IFAD.

15. The PTC, MFWWCD, MURD field officers and NGOs will be responsible for providing technical support to the communities in the formulation, design, appraisal and implementation of their initiatives. MURD's rural development officers will provide support both to the PCU and the participating communities in the implementation of infrastructure microprojects. The PCU and MFWWCD will consult with district councils and ensure that they are regularly kept informed of programme details and development initiatives planned for VCAs within their area.

16. **Rodrigues.** The Rodrigues management unit (PCU-R) will be responsible for the implementation of the subprogramme, with technical and administrative support from the Island Administration, short-term contract staff (i.e. financial controller, procurement officer and M&E specialist) and two support staff. A senior and widely-experienced candidate will be appointed by the Government as programme coordinator for Rodrigues (PC-R), who will be assisted by a Rodrigues deputy programme coordinator (DPC-R), a contracted financial controller and a procurement officer. The PCU will be responsible for the identification of project proposals through participatory planning approaches and will proceed with a technical, economic and social assessment of these proposals within the scope and objectives of the programme.

17. The selection of investment options within individual communities will be based on criteria that demonstrate: (i) community involvement in both the planning and implementation phases of the selected activity, including contributions from the beneficiaries in the form of labour inputs, provision of local materials or possibly the cash payment of a percentage of the total costs; (ii) agreement to receive suitable training to ensure sustainability in the operation and management of the community asset created by the programme and for group training for commercial activities (e.g., bookkeeping, accounting, simple business operations); and (iii) a commitment to contribute and maintain an agreed share as a proportion of total investment costs per beneficiary.



C. Monitoring and Evaluation and Reporting

18. The participatory nature of the programme influences the guiding principles of its M&E approach and methodology. The bottom-up approach adopted by the programme, the process of needs assessment, planning, design and implementation, and of community-based organizations representing the beneficiaries, provides foundation for a PME that provides opportunities for reporting and feedback from the beneficiaries, allows for continuous application of successful learning experience to implementation, and generates information that is needed for strategic decision-making.

19. The PME system will ascertain progress of subprogramme deliverables (i.e. inputs, activities and outputs) and process (i.e. sustainability, capacity-building and replicability) at the community, service provider and programme levels. The overall responsibility for PME of the subprogrammes will rest with the coordinators of individual subprogrammes and take place at three levels, i.e. beneficiary, subprogramme and MEDPRD, IFAD and cooperating institution.

20. At the subprogramme level, the monitoring cycle will involve the following sequence: (i) a focus group baseline survey will be undertaken during the initial phase, representing a benchmark for monitoring impact(s) of the subprogramme's financed interventions; (ii) the establishment of a subprogramme management information system with emphasis on four core variables; (a) physical progress; (b) sustainability of funded initiatives; (c) efficient use of funded facilities; and (d) replicability of programme activities; (iii) formulation of an overall PME plan. The PIU could, at the regional workshops, dedicate a day to develop a PME plan; (iv) identifying indicators; (v) determine information sources and design data collection tools; and (v) analyse and test PME data. The PIU and MEDPRD will, at an early stage, assess the relevance of the collected data jointly with other stakeholders

21. The programme will use the following reporting and review arrangements in order to ensure effective implementation:

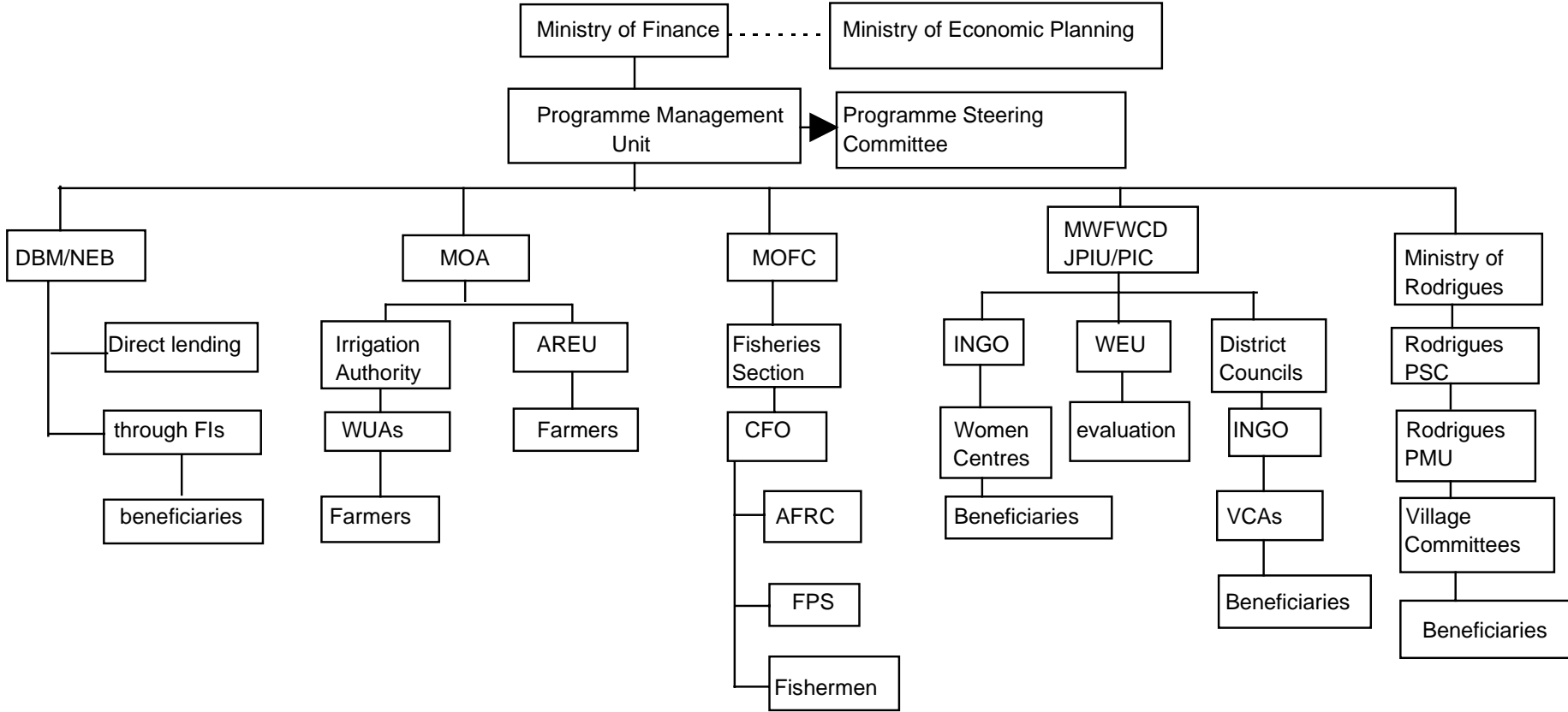
- (a) Progress reports. Quarterly and annual progress and financial reports based on an agreed format to be submitted by the respective subprogramme PCU heads to the PCU's M&E officer and IFAD.
- (b) A mid-term review will be carried out by the Government and MOF in consultation with IFAD/UNOPS by the end of the third year of the programme, i.e. about 2002. This review will cover all aspects, particularly costs and effectiveness, of irrigated agriculture, FAD fisheries, microenterprises, credit outreach, NGO performance and DBM and NEB loan portfolio performance. The findings of the review will form the basis of any mid-course correction to be introduced in the further implementation of the programme.
- (c) A programme completion report will be submitted within six months of the closing of the programme loan, highlighting the major findings, results and impact on the beneficiaries. The programme completion report will be furnished to IFAD within six months of the programme closing date.



D. IFAD/UNOPS Supervision

22. The first IFAD/UNOPS supervision mission will complete the orientation training and workshop for key personnel in MOF and other participating agencies on the detailed aspects of programme components, procurement, IFAD disbursement procedures, monitoring and progress reporting requirements, Special Accounts operations, statements of expenditures, accounting procedures, and programme accounting and audit requirements, etc. Subsequent supervision missions will include an appropriate mix of technical and financial skills necessary to review the social, financial and institutional aspects of the Programme. MOF will be responsible for coordination of IFAD/UNOPS missions; and MOA, MOFC, MFWCD, MEDPRD and MR will provide logistic support, and arrange to supply all information and reports required by the supervision missions and counterpart staff to participate in the periodic IFAD/UNOPS reviews.

ORGANIGRAMME





FINANCIAL AND ECONOMIC ANALYSIS

Financial Analysis

1. Financial analyses have been conducted to assess how the proposed investments and new technologies will affect beneficiaries' net income, and whether the magnitude of the incremental net benefit will be adequate to encourage them to participate in the programme. The findings of the analyses for each of the subprogrammes are summarized as follows:

- (a) **Irrigated agriculture.** Net income increase appears to be high in relative terms (26% to over 100%) and will be likely to attract farmers' participation in the subprogramme. Returns to investments in irrigation will be much higher for farms specialized in vegetable production or in growing a mix of cane and vegetables than for those involved in cane production only. For a 0.3 ha holding, the irrigated cane farmers will be able to obtain a minimum financial return of MUR 6 000 for the next ten years;
- (b) **Fisheries development.** Rates of return on investment (after financing) will be high in both Mauritius and Rodrigues, estimated at over 100% and 200%, respectively. The net incremental income of the fishing household is estimated to reach around MUR 20 000/year in Mauritius island and around MUR 33 700/year in Rodrigues; and
- (c) **Microenterprise and microfinance.** Five possible models for microenterprises have been developed and all show high profitability, ranging from MUR 14 000/year to MUR 36 000/year and returns on sales ranging from 17% to 33%.

Economic Analysis

2. The economic analysis has been conducted over a 20-year period for the fisheries development and irrigated agriculture subprogrammes, and over ten years for the microenterprise and microfinance subprogrammes. No economic analysis was undertaken for the community development subprogrammes in view of the nature of these investments, which will combine both social and economic objectives. All prices are expressed in constant June 1998 values. All costs that are directly related to expected benefits have been considered, including training, technical assistance and O&M. Costs for which no benefits can be quantified have been eliminated. Financial prices have been converted into economic values by removing taxes on input and investment costs as well as transfers (credit and subsidies). Given that the Mauritian economy is open, with low import and internal taxes, no standard conversion factor has been applied.

3. Financial prices of vegetables and fish are considered as reflecting economic values for those products. The sugar cane price paid to Mauritius planters is directly linked to the EU sugar price. Based on these assumptions, the ERR has been calculated for each of the subprogrammes.

- (a) **Irrigated agriculture.** The ERR is high for improving sprinklers on existing schemes, ranging between 31-33%, and the variations are largely due to the various sugar price assumptions used. The overall subprogramme is economically viable as it yields an ERR ranging between 15% and 18%, even if the costs of support to WUAs were fully accounted for (without quantifying its associated long-term benefits).



- (b) **Fisheries development.** The subprogramme is economically viable as its ERR is estimated at 14% (13% in Mauritius and 15% in Rodrigues). The ERR is quite sensitive to any decrease in benefits or cost increases. If subprogramme costs were increased by 30%, the ERR would establish itself at 11%; and a 20% decrease of benefits would reduce the ERR to 9%. Nevertheless, it is to be noted that fish catch per day and fish prices have been taken on the conservative side, while costs have been carefully assessed. Hence, such dramatic variations in costs/benefits are not likely to occur.
- (c) **Microenterprise and microfinance.** Calculations made for estimating the economic viability of this subprogramme are very indicative since a diversity of microenterprises will be promoted under the programme. The economic analysis is based on an average model constructed from five microenterprises. As the investment and recurrent costs of the subprogramme are low and microenterprises are very profitable, the ERR is very high (46%) even for a 10-year stream of costs and benefits. However, the ERR is more sensitive to decreases in benefits than increases in costs. Nevertheless, the ERR was in all cases tested as above 23%.
4. **Overall programme.** The indicative ERR for the overall programme (excluding community development costs) is high, estimated at 27%. The ERR is sensitive to any variations in costs or benefits.

Cost Recovery

5. **Irrigation O&M charges.** Members of WUAs, or alternative functional groups such as LAMUs, using irrigation schemes financed by the programme, whether new or existing schemes, will make a contribution to the overall annual costs for O&M. These include labour costs for moving the sprinklers and operating the headwork, electricity charges, and O&M costs of the in-field equipment. The latter will be transferred to WUAs by IA once the WUAs are properly constituted and legally registered. All other O&M costs, i.e. those related to the headwork and pipelines, will be borne by IA in line with ongoing government policies. The WUAs will meet the cost of replacements or repairs to structures in line with the principles of participatory irrigation management. Their contributions will be in cash when structures need to be repaired or replaced, and in-kind if construction materials or labour are needed. In the representative farm models, the assumed irrigation charges borne by the irrigator/hectare for new schemes has been estimated at MUR 6 200/ha¹ and have the following breakdown.

IRRIGATION CHARGE PER HA PAID BY FARMERS ON NEW SCHEMES

Component	Amount per ha a/	
	(MUR)	(USD)
Water rate a/ (ex. for sugar cane and sprinkler)	70	3
Labour costs	4 030	168
Electricity charges	1 000	42
In-field equipment maintenance costs	1 100	169
Total	6 200	258

a/ Figures rounded up.

6. **Capital contributions by beneficiaries.** Planters and farmers will make a marginal contribution to the capital costs of rehabilitating existing irrigation schemes or developing new schemes. They will make an up-front contribution of 10% of the capital costs of in-field equipment and a contribution to the derocking costs of MUR 29 000/ha. Farmers' contribution to in-field equipment costs are assumed in the farm models at MUR 4 400/ha for new sprinkler irrigation,

¹ As against the real cost, farmers pay on average MUR 4 200/ha at present, but this figure varies between schemes.



MUR 1 000/ha for improving existing sprinklers, MUR 5 220/ha for converting existing sprinkler to drip irrigation, and MUR 3 000 for derocking operations.

7. The justification for the large capital expenditure borne by the Government for irrigation and derocking is that the economic returns to the country as a whole are larger than the financial returns to the individual planter. If the net present value of the future benefit stream of new irrigation development is calculated on a per hectare basis, it will be equivalent to USD 7 500.

8. **FAD maintenance.** The overall financial return from each of the FAD fishery models is quite high and the programme does not envisage any difficulty for the fishermen to bear the O&M charges. The fishermen development subprogramme proposes that the FAD maintenance costs be progressively borne by the fishermen operating on FADs. This contribution will be met through levying an annual FAD boat licence fee proposed at MUR 2 500/year, or MUR 833 per fishermen. Representative fishing boat models demonstrate that such a cost could be easily met by fishermen, whose income is expected to increase by MUR 20 000/year in Mauritius and MUR 33 000/year in Rodrigues. By the end of the subprogramme, total licence fees levied by FPS in Mauritius and Rodrigues will amount to around MUR 0.55 million, which will be sufficient to cover the FAD maintenance costs (estimated at MUR 0.5 million).

9. **Community development and microenterprises.** Under the community development subprogrammes, beneficiaries are expected to contribute 10-20% to the various community initiatives to be supported by the subprogrammes, mainly in form of labour. Microentrepreneurs will contribute some 20-40% of total investment costs for the construction of worksheds attached to their houses for installing and developing their economic generating activities. For all three subprogrammes recurrent costs associated with the investments will be borne by the beneficiaries.