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REPUBLIC OF MOZAMBIQUE
INTERIM EVALUATION
NAMPULA ARTISANAL FISHERIES PROJECT

EXECUTIVE SUMMARY

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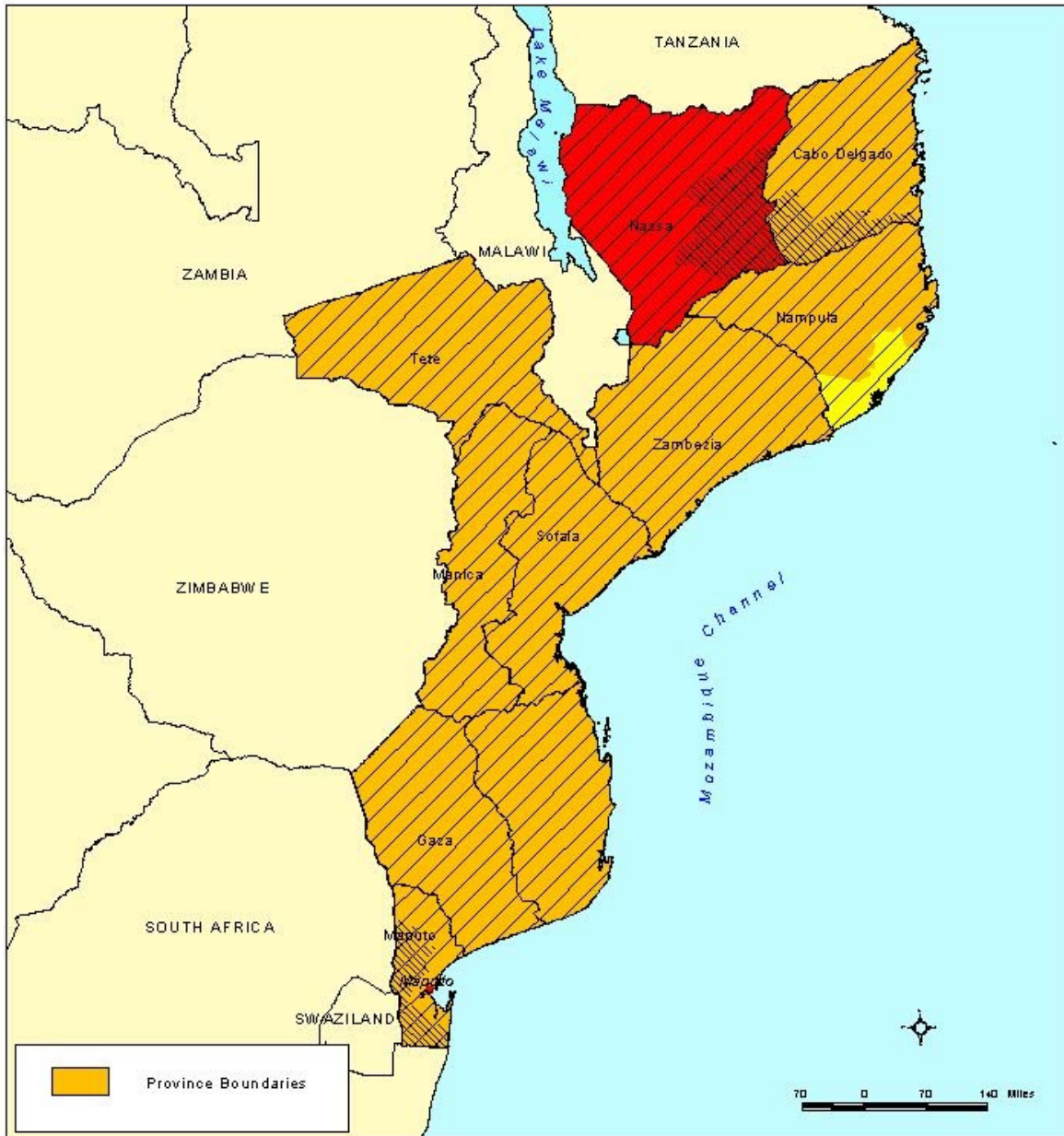


ABBREVIATIONS AND ACRONYMS

CARE	Co-operative for Assistance and Relief Everywhere
CRER	Rural Enterprise Microcredit Programme
FFPI	Fundo de Fomento Pequena Indústria (Development Fund for Small-Scale Industries)
IDPPE	Instituto de Desenvolvimento da Pesca de Pequena Escala (Institute for the Development of Small-Scale Fisheries)
IIP	Instituto de Investigação Pesqueira (Fisheries Research Institute)
NAFP	Nampula Artisanal Fisheries Project
NGO	Non-Governmental Organization
OPEC Fund	Organization of the Petroleum Exporting Countries Fund for International Development
PCR	Credit Groups
PCU	Project Coordination Unit



MOZAMBIQUE



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**REPUBLIC OF MOZAMBIQUE
INTERIM EVALUATION
NAMPULA ARTISANAL FISHERIES PROJECT**

EXECUTIVE SUMMARY

I. INTRODUCTION

A. The Project

1. The Nampula Artisanal Fisheries Project (NAFP) was formulated during 1991-92, while Mozambique was still in the throes of civil war; it was appraised in February 1993 and the project's Loan Agreement signed in January 1994. Total project costs were USD 11.3 million, of which USD 6.0 million funded by IFAD, USD 3.3 million by the Government of Mozambique and USD 2.0 million by the Organization of the Petroleum Exporting Countries Fund for International Development (OPEC Fund). The project effectiveness date was 4 November 1994, and the expected closing date is 30 June 2001. The cooperating institution is the United Nations Office for Project Services.

2. The overall project objectives were to: (i) improve the income levels of about 9 300 artisanal fishermen's families in the districts of Angoche and Moma; (ii) contribute to employment-generation; and (iii) improve food security. Since the mid-term review of the project in 1998, the district of Mongincual has been included in the project area, as well as the district of Pebane in the province of Zambezia as a further outreach area.

3. The project's objectives were to be achieved by: (i) assisting artisanal fisheries development through the provision of production inputs for fisheries activities, experimentation and the provision of extension services in the field of fishing technology, the promotion of improved methods for the processing and commercialization of fish, and monitoring and evaluation of accessible fish resources to artisanal fisheries activities (research); (ii) establishing and rehabilitating rural infrastructure, including rehabilitation of tertiary roads, provision of wells and building of health clinics; (iii) providing financial services such as the provision of microcredit, assistance in savings activities and assistance in short-term loans for the development of microenterprises; and (iv) institutional development. Following the mid-term review, a community development fund (identifying and implementing microprojects) was introduced as a new component of the project.

B. The Interim Evaluation Process

4. As a primary objective, the interim evaluation mission was to assess project impact and sustainability, and to develop a series of recommendations and lessons learned. After a one-day briefing at IFAD Headquarters on 2 May 2000, the mission travelled to Mozambique on 3-4 May 2000. Before travelling to the province of Nampula on 6 May, the mission was briefed by: (i) the director and senior staff of the Institute for the Development of Small-Scale Fisheries (IDPPE); (ii) the director and senior staff of the Fisheries Research Institute (IIP); (iii) staff of the Co-operative for Assistance and Relief Everywhere (CARE), an international non-governmental organization (NGO); and (iv) the executive director of the Development Fund for Small-Scale Industries (FFPI), a state-controlled business development organization.



5. Accompanied by two senior officials of IDPPE, the mission visited project areas from 6 to 16 May 2000, holding discussions and visiting project sites in the following three districts: (i) Moma (Mucoroge, M'putine, Pilvili and Larde); (ii) Angoche (KwiriKwidje, Sangage, Quelelene, Murrua); and (iii) Mongicual (Liúpo, Namige and Quinga). Discussions were held with the provincial director of agriculture, Nampula province; district administrators; district directors of health and education; members of fishermen's associations; members of co-management committees; credit associations; water committees; health and education committees; and some wholesale traders. In addition to holding discussions, the mission visited water supply (boreholes), health centres, schools and rehabilitated roads – all of which have been supported by the project. The field mission undertook some diagnostic analysis in order to identify the economic, sociocultural and technical determinants responsible for project efficiency, effectiveness and impact, and overall performance. Before returning to Maputo on 17 May 2000, the mission participated in a stakeholder workshop, held on 16 May 2000 at the project's Angoche district headquarters. The workshop was designed to enable project staff to learn about stakeholders' perceptions and understanding of the project's objectives, and their assessment of the project's relevance and usefulness. About 70 people took part in the workshop. A wrap-up meeting was held with a range of project partners in Maputo on 24 May, where the mission discussed its initial findings and conclusions.

II. PROJECT PERFORMANCE

A. Artisanal Fisheries Development

6. **Provision of fisheries equipment and materials.** Supply of fishing gear and spare parts for boat rehabilitation was very poor in Nampula province until the mid-1990s. When available, this scarce input supply was compounded by high prices. Following pressure from the project, import duties that had earlier been pegged at more than 18% were reduced in November 1996 to between 6% and 14% of cost insurance and freight prices. The project's first attempt to import fishing equipment through a private trader in 1996 collapsed, but it gradually established linkages, including exchanges of information with commercial firms, that have excellent prospects for sustainability. Presently, a commercial trader has established himself in the project area, and a further two distributors are expected to open shops in Moma and Angoche. The resulting competition has had a positive impact on both prices and availability of fishing inputs within the project area.

7. **Adaptive research and extension services.** Data are collected regularly on fisheries technology (equipment), fisheries resources (catch/environment) and post-harvest technology and marketing, and they are then inserted into the IIP database. Analysis of the fish survey data revealed that a total of 250 aquatic species have been encountered in the catches. Three of these species, namely **prawns** and two species of the commonly caught **anchovies**, have been selected for further study, and individual stock assessment studies have been commenced to monitor migratory patterns and provide knowledge that will benefit artisanal fisheries activities in the future. Knowledge of resource characteristics is needed to guide development actions and resource management measures that will safeguard the long-term sustainability of the country's fisheries resources.

8. **Improved fishing techniques.** In partnership with fishermen, the project has conducted several trials on different types of fishing gear and practices at various fishing centres in the three districts. Gill nets are the only technology that has reached the final step of the trial; the results from 2.5''–5'' mesh size were satisfactory. Long-line fishing has shown promising results, and the trammel net experimentation, used for selective prawn catch, is showing extraordinary results. Early this year, two IDPPE staff and three fishermen visited Zanzibar to study the use of light tracked purse seines, which will be soon tested by the project.



9. **Extension.** The project's extension system consists of 12 extensionists, who either work with fishing centres based in the field or are subject matter specialists based centrally at the project office, but who take frequent field visits. Field extensionists are responsible for the collection of data on fish catches and other relevant aspects and the provision of advisory services to the coastal communities. The extensionists constitute the communication link between the communities and the project. The project recognizes the



need for further development and improvement of extension services in the area of marketing and technical extension messages to provide specialized advise to the fishermen, including information on markets and prices, and methods of conservation, to enable them to gain access to high-paying markets for quality fish.

10. **Improved methods for fish processing and commercialization.** The project tested and demonstrated at various fishing sites a number of approaches in fish processing and preservation such as rack drying, salting and drying in the rainy season and smoking. Drying racks and salting tanks for small pelagic fish have not been taken up because the effort and cost for putting them up in most cases exceeded their utilization level by the mobile beach seine fishermen. The greatest success has been the upgraded smoking kiln, as modified by the project based on the 'chorkor' method, which is a low-cost, easily operated smoker, with higher production capacity and better efficiency in wood consumption than traditional kilns. This innovation has been moderately taken up: fish processors have installed 43 smoking kilns, in addition to the six pilot plants that the project has installed and rented out. Eight more smoking kilns were installed, five piloted by the project and three installed by private processors, in conjunction with salting tanks.

11. **A fish price information system** has been implemented in the market of the city of Nampula and main inland markets whereby prices are collected weekly; however, this has not been carried out consistently and little information has been analysed and disseminated to fishermen. The project has renewed the contacts with the Agricultural Marketing Information System to restart cooperation on the price monitoring of fish.

B. Fisheries Management

12. **Regulation.** In June 1999, the project achieved legal dispensation of Law 3/90 on fisheries, renewable on a yearly basis, to use only 0.5" (12 mm) mesh for beach seines as opposed to using the 38 mm mesh beach seine in the project area. The 12 mm mesh size limitation seems acceptable to the fishermen, and appears to be a suitable replacement for mosquito nets since it reduces the capture of larvae and juveniles while still allowing the readily marketed small pelagic fish to be caught. The project also sought and achieved legal dispensation to extend the trawler exclusion zone from one to three nautical miles clear of the coast in order to reduce competition between semi-industrial and industrial trawlers and artisanal fishermen. These regulations are now being enforced and have started to give positive results, including reduction in the use of mosquito nets and in encroachment and an increase in the fishing area available to artisanal fishermen.



13. **Co-management of marine resources.** The project promoted the formation of local **resource management committees** and **co-management committees** with the aim of developing fisheries management mechanisms to be implemented in close collaboration between the fishermen and the fisheries administration. Fourteen local resource management committees of net owners have so far been elected in community meetings in the three districts of Moma, Angoche and Mogincual.

C. Rural Infrastructure Rehabilitation

14. **Feeder roads.** The rehabilitation of approximately 138 km of feeder roads is nearing completion. Construction contracts stipulate a warranty of one year to allow the contractor to rectify probable technical faults following the rainy season. After the quality of works is assessed, the completed road is handed over to the Provincial Directorate for Public Works and Housing.

15. **Water supply.** The water supply contractor has completed the construction and rehabilitation of 122 water points in 42 communities, equivalent to 81.3% of those targeted by the project. Siting of the new boreholes was decided in close consultation with the communities concerned. Although some 18 water points have problems such as red and saline water, only 2 out of 122 are not functioning.



Each water point is being managed and maintained by a water committee elected by the community concerned, usually consisting of five members. Each family benefiting from the water supply contributes MZM 1 000 per month to the maintenance fund. Beneficiaries actively participate in the water committee's deliberations and contribute to pump maintenance expenses readily and willingly.

16. **Health posts and schools.** Improvement of health facilities included the rehabilitation of 20 health posts and centres. These project activities are presently being undertaken through the community development fund component, which promotes community infrastructure and services through microprojects based on a 25% contribution from the communities, mainly in the form of labour and local materials. Participatory rural appraisals were used to identify eight microprojects (five schools and three health posts). Two health centres have been completed in Mucoroge and Inguri under the rural infrastructure rehabilitation component. However, they were constructed without toilets and water installations and are not yet in function. No other microproject has been completed.

17. Each microproject is planned and implemented in a participatory way with a locally elected committee, whose main objective is to organize, collect and manage the local contribution and ensure that the community actively participates in the implementation of the microproject. At present, four committees with approximately 50 members are functioning.

D. Financial Services

18. **Rural microcredit.** An initial two-year contract, which was renewed in April 1999 for another two years, was signed between IDPPE and CARE to implement the scheme. Credit operations started in Angoche in January 1997 and over time used the following methodologies:



- (a) **Credit associations** with a maximum of 30 members per group, who formed sub-groups of five people. They received loans of up to USD 80 per member, with credit mainly targeting small-scale vendors. Five associations received credit; however, as they could not take responsibility for the loans and credit recovery was poor, the operation was discontinued in July 1997;
- (b) **Solidarity or confidence groups** of three to five people. They received loans of up to USD400 per member, with credit mainly targeting fishermen/traders and itinerant traders. This programme actually started in 1998, with the CARE component being part of the jointly funded Rural Enterprise Microcredit Programme (CRER) with the Dutch Government. The first loans were in the range of USD 20-120 for small operators and USD 200-300 for larger operators. A total of 126 groups were formed, but only 59 are operational; together they have 184 members, of whom less than 5% are women. In May 1999, there were 125 loans outstanding in Angoche and Moma, for a total value of USD 16 000. Most clients were urban traders; no loans were issued for the procurement of fishing gear. CARE concluded that the very limited progress made was the result of the low economic activity in the project area, social instability and the lack of a tradition of participating in credit schemes;
- (c) **Savings clubs** were introduced to the programme in 1998, based on the Zimbabwean “stamp” model operating through the post offices and banks. Clubs consisted in most cases of 5-15 urban women. The main motivation for participation has been the need to have a safe place for money and an opportunity to build reserves against future hardships. The system allows deposits of any size, which are recorded in saving books using stamps denominated by amounts of MZM 5 000 or 10 000. Withdrawals are permitted once a page (10 stamps) has been filled. To date, 55 groups have been established involving 484 members, of whom 75% are women;
- (d) **Rotating savings and credit groups (PCRs)**, which have proved successful in isolated communities in Niger, were introduced in the project area. This method does not require the services of the bank system since savings are either immediately lent within the groups or, after 26 weeks of collection, shared, and a new round of collection is then started. PCRs operate on low minimum requirements, as low as MZM 1 000. Money is borrowed for a variety of social and economic reasons including for the establishment of income-generating activities. A total of 12 PCRs were formed, in Larde and Quelelene districts;
- (e) **CRER** was also expected to deliver credit to small groups of three to five gill net owners, for individual values of Mt 4–6 million, but failed to do so. According to CRER field workers, the principal reason for this shortcoming was the impossibility of getting the members of each group together at the same time for the required training.

19. **Formal credit line.** Formal credit to small or microenterprises that play a role in the fisheries economy was channelled through FFPI, on the basis of a subsidiary loan agreement signed with the Ministry of Finance. FFPI staff operate a mobile service in NAFP districts with a vehicle provided by the project. Demand for credit operated through FFPI is consistently high. Some 189 applications have been made, but only 30 loans have so far been disbursed, for a total value of about USD 125 000. Only two clients are considered problematic, and a portfolio at risk of 23% has been achieved.



E. Institutional Framework, Project Management and Coordination

20. Project management has been entrusted to IDPPE, the main operational fisheries institution, with major activities falling within the broad areas of applied fisheries research, training and extension, fisheries policy and project analysis. IIP is responsible for estimating fisheries resources in the country and for fisheries research. A project coordination unit (PCU) has been established within the IDPPE delegation at Angoche but falling under the administrative supervision of the national director of IDPPE. The PCU is headed by the project coordinator, who is responsible for the day-to-day management of project activities.

21. Through staff training and technical assistance, the project contributed to the considerable improvement made by IDPPE and created an environment conducive to planning and policy formulation for the development of small-scale fisheries. In particular, staff of the project/IDPPE offices in Angoche and Moma have been notably strengthened and hold promise for sustaining the field operation when the externally supported project expires. Extensionists have been trained in management, extension techniques and other subjects to enable them to gain competence and autonomy in the dissemination of project activities in their area of responsibility.

III. COMMUNITY ORGANIZATIONS

22. NAFP is promoting the formation of various community organizations in order to facilitate a participatory implementation of the different components of the project. Today, due to the efforts of the project, a total of 142 community organizations (14 resource/co-management committees, 2 fishermen's associations, 122 water committees and 4 microproject committees) with an estimated 950 members actively participate in project activities aiming at improving the living conditions of the communities in the project areas. In a society traditionally dominated by men, the participation of women together with men in water committees is considered a very important project achievement.

23. The project employed two strategies to promote the formation of community committees and organizations: (i) it focused on the creation of enabling conditions that enhanced the capacity of beneficiaries to improve their household income, such as access to credit and savings facilities and the linking of fishing and other economic activities with markets through private traders and microenterprises; (ii) it created conditions for the satisfaction of the communities' basic needs, including water supply and sanitation, primary health care and education, in compliance with the ideals of sustainable human development.

24. Overall, the committees are well established and have performed with considerable success. Only the microproject committees under the community development fund have encountered difficulties, partly because of their complex set-up, the large populations involved and the lack of tradition for this kind of collaboration.

IV. ANALYSIS AND IMPACT

A. Targeting

25. In the appraisal report, the principal target group was defined as 9 300 skippers and crew members and their families. Given an average family size of 6.7 individuals, this implies a target group of around 62 000 persons. In addition, another target group, comprising some 2 000 women engaged in fish processing and trading activities, was also envisaged.



26. The 1998 mid-term review considered it unrealistic to expect that more than a very small number of the crewmembers would progress into being net and boat owners themselves or that women would become involved in fish processing and trading. Consequently, it recommended that the best way to assist these two groups was through increasing the overall productivity of the fishing units, which would yield higher returns to the ordinary fisherman, who receives 50% of the value of the catch as payment. NAFP adopted the mid-term review's recommendation, even though it entailed a shift from targeting the poorest members of the communities (crewmembers and women) towards targeting a small group of relatively well-off and influential persons (net and boat owners). This strategic change was justifiable for two reasons: (i) the investment needed to engage in fishing and the demands for collateral from credit institutions would preclude the poor crewmembers and skippers; and (ii) under the socio-economic conditions of Mozambique, it provided the most practical way to help the original target group. Targeting functioned through the provision of technical inputs and formal credit to net owners to improve their beach seines and credit to large-scale traders to ensure the availability of fishing materials in the project area.

27. It is estimated that the project has reached some 22 000 persons (or 36% of the target population) under the artisanal development component, some 27 000 persons (or 44%) under the road rehabilitation scheme; up to 175 000 persons (or 276 % of the total target group) under the water supply scheme; and some 900 persons, many of them women, under the various credit and savings groups. No schools or health centres are functioning as yet, and therefore no project beneficiaries have been reached. The project has also targeted small- and large-scale traders, providing them with formal credit to improve marketing and the accessibility of fishing equipment and other inputs in the area.

B. Artisanal Fisheries Development

28. **Provision of fisheries equipment and materials.** NAFP has facilitated the availability of fishing gear to local communities by influencing tariff levels and entering into an effective dialogue and information exchange with commercial companies, thus attracting the retail business for fishnets to Moma and Angoche. The linking of private-sector marketing networks with the fishing communities has not only improved but has also guaranteed the supply of fishing inputs and equipment, as well as the marketing of fish and fish products. This progress can be attributed to the project; however, there is a lack of corresponding economic access to the same inputs. Non-access to credit compelled fishermen either to make their own nets in their backyards or to continue using mosquito nets, to the detriment of the marine resource environment. Additional work is needed to improve the macroeconomic conditions for input supply, including further tariff reductions and the development of an adequate credit delivery system.

29. **Adaptive research and extension.** In partnership with fishermen, the project has tested different types of fishing gear and various approaches to fish processing and preservation in order to encourage fishermen to adopt sustainable fishing practices and promote efficiency in fish production. The use of trammel nets for shrimp harvesting in the experimentation exercises was successful, and many fishermen adopted the technology. Likewise, a number of fishermen took up gill nets, long lines and trammel nets as appropriate and best suited to their fishing efforts. These nets do not catch the same type of fish or the same size and amount of pelagic fish as the beach seines. However, although the development of fisheries technologies and the diversification of fishing practices is essential to secure a more sustainable use of resources, it was found that their successful introduction is dependent on many factors beyond the technology itself, including access to inputs and financial services, the market opportunities for new products, and processing and storage techniques.

30. **The integration of local fishing communities** into research and technology development has validated both the relevance of the adaptive experimentation approach and the fast dissemination and adoption of generated technological innovation. The participatory adaptive trials benefited from



fishermen's knowledge and needs, and contributed to increased awareness of the potential for and constraints to artisanal fisheries development. Before the end of the participatory trial, participating fishermen knew the results/benefits and spread the word among their fellow community members, several of whom learned from this positive experience. Thus, in addition to contributing to more efficient and cost-effective research, participating fishermen also reduced the pressures on extension workers and helped disseminate research results. However, the process of dissemination and the strengthening of the extension service as a whole, including the development of technical extension messages in the project area, still requires further attention.

31. Improved methods for fish processing and commercialization. Fish processors in Moma and Angoche have shown a positive appreciation of the smoking kilns introduced by NAFP. Though not quantifiable at present, consumption of fuel wood and post-harvest losses from the adoption of these methods have been reduced. The project has enhanced prospects and opportunities for village industry by providing

support to improvement of commercial infrastructure (processing, drying, etc.). The increased use of these technologies is dependent on effective credit support and market information systems; without these measures, it is unlikely that smaller-scale processors will adopt the proposed technologies.

C. Financial Services

32. Formal credit line, FFPI financing operations. Both the number of loans (only 30) and the amount of funds (only USD 125 000) issued by FFPI were very small; therefore, the credit could hardly make any noticeable impact on artisanal fishermen as a group, however significant it might have been for the individual recipients. Almost all fish operators who met with the evaluation team expressed the need for credit to purchase raw material inputs. The technologies on improved fishing and processing promoted by the project link extension directly to a credit package tailor-made for the needs and capacities of fishermen and processors in the area.

33. Microcredit. The provision of CARE/CRER financial services has contributed to the day-to-day credit needs of the communities through the introduction of PCRs and solidarity and confidence groups. Members of the groups, particularly women, have been able to save and borrow in order to buy food commodities for trade within the communities. Confidence groups were successful in delivering credit for small traders, whereas the stamp-based scheme has been better at targeting women and establishing savings, and it is a more easily understood system. Future designs should emphasize savings in a broader perspective, allowing for the methodology to move towards the mobilization of savings for credit and investments.

D. Fisheries Management and Environmental Sustainability

34. The project has helped IIP to establish a successful monitoring system for the collection of data from the many artisanal fisheries centres in the area. The studies being carried out and those to be undertaken will play an important role in guiding the long-term judicious use of marine resources and optimizing the sustainable benefits for the artisanal subsector. The establishment and successful



development of the fisheries data collection system is now being replicated in other parts of the country through a programme supported by French Co-operation.

35. By facilitating the formation of 14 co-management committees and two fishermen's associations in Moma and Angoche, NAFD has helped reduce undesirable fishing practices, primarily the use of mosquito nets and *quinia* for fishing. In addition, the project's strategy is to provide incentives to borrowers (i.e., credit to purchase trammel nets, purse seines, drift nets, gill nets and long lines for open sea fishing) and thus improve the marine environment. The institutional dialogue established and the creation of a favourable environment for artisanal fisheries constitute a very sound activity in the process of regulation through empowerment of both the fishermen and their organizations and the marine institutions such as IDPPE and IIP.

E. Community Development Fund and Rural Infrastructure Development

36. Coordination with local health authorities has proved problematic, reflecting limited capacity in the health services and health care. An effective project strategy would be to provide basic support to the communities by targeting midwives, social/health workers, and so forth. Community development on a participatory basis in Nampula has proven to be more difficult than originally envisaged because of the underlying conflicts that exist among the community governing structures. Although no microprojects have yet been completed, it is an encouraging sign that functioning commissions have been established and community members generally seem agreeable to contributing 25% of the costs of the microproject. These are two indications that the communities in the project area have generally accepted the concepts of sharing and ownership.

37. **Wells** must be considered a very successful component. At present, only 2 out of 122 wells rehabilitated or constructed by the project are not functioning. There is no doubt that this component has brought about a significant improvement in the standard of living of the target group as a whole and of women in particular. Their daily tasks have been alleviated, and they and their children are now less exposed to waterborne diseases.

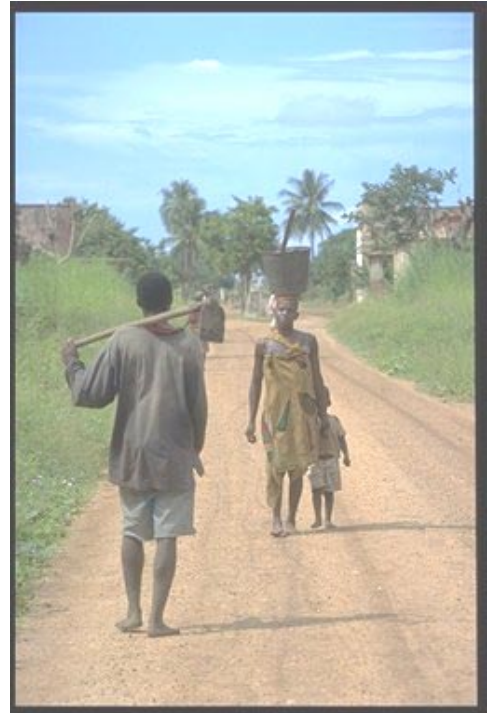
38. **Roads.** The positive impact of the road component is already visible in the targeted communities. Fishing societies have been physically connected to the surrounding world, which has most importantly meant access to markets both in terms of selling products and buying commodities. One of the main objectives of the project has thus been achieved. In addition, many more people benefit from road rehabilitation, including the inland communities along the roads, which are not fishermen's communities.



F. Empowerment of Communities

39. The greatest socio-economic impact of the project is probably its contribution to the empowerment of fisheries communities. The project has been able to create conditions that enable the fishing communities to become aware of development potentials and to start converting latent labour and other resources into real productive resources. It has empowered the communities by promoting the formation of groups and social organizations, building capacities and developing skills, and has thus brought about desirable changes, especially improved participation in decision-making processes in policy planning and implementation.

40. **Gender.** An acute problem in the fishing area is the gender division of labour. Women have virtually no role in the fishery industry, and their economic activities are almost exclusively restricted to agriculture and selling small surpluses at local markets. Very few women are engaged in informal-sector commercial activities. Through their empowerment and their gradual participation in committees and organizations, the marginalization of women is being progressively reduced.



V. SUSTAINABILITY

A. Marine Resources

41. The maximum sustainable yield for the Moma and Angoche marine ecosystem was estimated to be approximately 14 000 t. Presently, the landings in the region already stand at about 15 000 t, indicating a high pressure on fish resources in the region, which is threatening long-term sustainability. The proper utilization of the IIP fishery data and research results by the authorities in formulating appropriate fisheries policies and strategies, including management action and administrative measures such as the legal dispensation of mosquito nets and the extension of the trawler exclusion zone to three nautical miles from the coast, provides hope that gradually a comprehensive and dynamic regulatory framework will be put in place, which will in the long term safeguard the judicious use of marine resources and ensure optimal sustainable benefits for the artisanal subsector. The resource management issue involves development of strategies for fisheries resources research, improvement of fisheries statistics, monitoring and surveillance activities, and the development of institutional arrangements to translate resource management information into action.

42. Management of fish resources will be one of the most important tasks of the new Ministry of Fisheries and will necessitate the development of a modest capability for surveillance and monitoring of fishing efforts, initially focusing on the stocks most acutely threatened. It is, furthermore, the responsibility of the fisheries administration to coordinate with and make good use of the co-management committees in order to create awareness of fisheries management issues and acceptance of the need for discipline by and within the communities. Thus, the integration of community organizations into the embryonic co-management system, even though in a consultative capacity, contributes positively to fisheries resource management.



B. Financial Services

43. The rationale of success for the credit systems lies ultimately in ensuring that the financing lent to the borrower will in the long run contribute to making the borrower's activity self-sustaining, while at the same time being a good business venture for both FFPI and CARE/CRER. Credit issued on the basis of borrowers' potential growth and the viability of their ventures is also a desirable indicator of sustainability and economic growth among the communities. In addition, it is an important intervention mechanism contributing to the judicious management of marine natural resources. Given the poor economic conditions of Mozambique, the development of the microfinance system will require time, at least ten years or more, to achieve satisfactory results. Availability of credit to fishermen and processors to, *inter alia*, purchase inputs and maintain/substitute fishing gear will have a positive effect on sustainability and the employment prospects of crewmen, whose families rely on the income derived from fishing. Support for the strengthening and further expansion of the CARE/PCR savings groups could eventually lead to a sustainable source of credit for the poorer segments of the communities through the mobilization of savings. The consequences of not meeting the credit needs of eligible applicants and the absence of an adequate financial delivery system to support technical diversification may, in the long term, place a principal source of livelihood for fishermen and their families at risk.

C. Community Development Fund and Rural Infrastructure Development

44. Inability to maintain the network of tertiary roads will cut off the inland urban market, which is the main fish market, and prejudice the realization of increased income levels, employment-generation and food security. Lack of road maintenance will also affect the provision of health services linked to medical centres, make schools inaccessible and contribute to an overall reduction of the exchange economy's performance due to reduced access of traded food commodities to fishing communities. The project should open a dialogue with the Government to address the road maintenance issue. Although no microprojects relating to **health posts and schools** have yet been completed, the establishment of functioning commissions and the willingness of the community to contribute 25% of the costs indicate, as mentioned earlier, that the concept of sharing and ownership of community development initiatives have been developed in the project area.

D. Project Management and Coordination

45. Over the years, the institutional capacity of the implementing agencies has been strengthened, and project management has demonstrated improvement in performance typified by growing professionalism and a strong strategic vision for future development.

46. In recent years, IDPPE has made substantial contributions to the legal and management reforms relating to fisheries. Nevertheless, its institutional capacity still requires further strengthening and consolidation at all levels of staff training, including institutional dialogue and communication. Likewise, the institutional capability of IIP requires upgrading and strengthening through training and the provision of appropriate equipment. IIP also needs assistance to expand its work on monitoring and stock assessment for fisheries management in the project area, as well as improved statistics to correlate fish stocks with effort and catch. In light of the project's achievements, IFAD's management and the Government are considering implementing a second intervention in the fisheries sector in Mozambique. Thus, the opportunities for longer-term sustainability and development of activities and results promoted under the project are likely to be further strengthened.



VI. LESSONS LEARNED

A. Input Supplies

47. The project has been successful in facilitating and influencing positively the availability of fishing gear in the project area not through its direct importation but by influencing the duty and tariff levels and linking private-sector marketing networks with the fishing communities. The important lesson to be drawn is that the creation of a suitable economic framework and the encouragement of private-sector companies through effective linkages and dialogue are a more effective mechanism for socio-economic growth and poverty alleviation than any direct project or government commercial intervention.

B. Adaptive Research, Extension and Participatory Client-Driven Technology Development

48. The integration of local fishing communities into research and technology development has shown both the relevance of an adaptive experimentation approach and the fast dissemination and adoption of generated technological innovation and research results. Participatory adaptive research benefits from fishermen's knowledge and creative diagnosis, provides vital feedback in technology design and stimulates further research in response to fishermen's needs. Before the end of the participatory trial, participating fishermen know the results/benefits and spread the word among their fellow community members. Thus, participatory adaptive research, in addition to contributing to more efficient and cost-effective research, relieves pressures on the extension workers and contributes to a more cost-effective extension system. However, the process of disseminating research results in the project area and strengthening the extension service as a whole, including the development of technical extension messages, still requires further attention.

C. Fisheries Technology and Marketing

49. The use of trammel nets for shrimp harvesting in the experimentation exercises was successful, and fishermen adopted the technology. The development of fisheries technologies and diversification of fishing practices are essential to secure a more sustainable use of resources, but their successful introduction has been found to be dependent on many factors beyond the technology itself, including access to inputs and financial services, the market opportunities for new products, processing and storage techniques. NAFP has shown that such programmes can be used as effective for a for the exchange of technical experience among fishermen. The establishment and maintenance of a market information system to support associated project activities (especially fisheries technology and processing) has proved to be relevant and useful. Sustainable methods for information collection still need to be perfected. In addition, diversification of fishing practices could be encouraged by policy-related incentives and disincentives such as increasing licence fees for beach seines (higher costs) versus lowering those of gill nets or purse seines, which would encourage fishermen to shift fishing practices. It is therefore recommended that (i) future project designs incorporate more active policy and planning roles for articulation with the Government, and (ii) the project provide support to market development initiatives including the establishment of shore infrastructure, landing facilities, auction halls, ice making, cold storage and market information.



D. Fish Processing and Income-Generating Activities

50. The development and dissemination of improved processing methods has proven difficult, due in part to the dynamic and migratory nature of fishermen and poor technical institutional capacity. In addition to people involved in fish processing, there are a large number of skilled workers in the project area with capabilities in weaving nets and piecing inputs for fishing. It is recommended that the project explore the possibility of providing support, mainly through the supply of credit, for the development of income-generating activities to utilize available skills, create local employment and improve household incomes. Extension techniques and messages in this field require further adaptation to suit both production and market access. The effective delivery of financial services is absolutely essential.

E. NAFP, IDPPE and IIP

51. Over time, the constructive collaboration between IDPPE and IIP has been strengthened, and their research activities have been intensified with very beneficial results on the quality and quantity of the output of both institutions. The development and establishment of a fisheries data collection system was successful, and the model is now being applied in other parts of the country through a programme supported by French Co-operation. Anchorage of the project in IDPPE remains highly relevant, and the PCU has achieved notable successes in management and coordination and in the improvement of the wider conditions for artisanal fisheries. It is advisable that the two institutions resolve internally whatever problems and disagreements they may have and avoid changes to the overall administrative framework of NAFP. For reasons of the efficient use of limited manpower and financial resources, and for the sustainability of project services in the post-project era, the use of in-line government institutions for project implementation is sound, and it is recommended that NAFP continue to act as a catalyst in strengthening the capacity of cooperating institutions.



F. Financial Services

52. The project has made important advances in the delivery of financial services at community level. The four-year microfinance pilot scheme has tested the feasibility of the approach and has set up an operating delivery system. Notwithstanding weaknesses, an important lesson learned is that the rural fishing communities were able to overcome the barriers of working jointly in groups of trust for mutual financial benefit. In conjunction with this, a second lesson learned is that, under the socio-economic conditions of the project area, where the culture of borrowing through rural credit was almost absent among the population and no money-delivery system of this kind existed, the widespread acceptance of the savings and credit concepts by the fishing communities required a longer time frame than originally envisaged in the project design. Experience shows that each of the four methodologies tested has its strengths and weaknesses, but savings were seen as the most valued and appreciated of the financial services offered. Further development and consolidation of the microfinance network with project support, particularly the savings groups methodology, should include strengthening the network and extending it to other areas, not only other fishing communities, and the creation of credit unions to service the financial intermediation needs of the poorer income groups.

53. Strengthening of these institutions should involve accompanying measures in the field of training, institution-building and development of the appropriate legislative and regulatory framework. It is highly recommended that the project continue to work towards the development and consolidation of a long-term sustainable microfinance system, capable of extending financial services to the poorest target group, including loan capital from the mobilization of savings for non-fishing activities, to the women heads and other members of fishing families. Emphasis should be given to savings in a broader perspective allowing for the methodology to move towards credit.

54. Concurrently, efforts should be made with FFPI to improve its lending programme to small fishermen, and community members involved in processing and marketing. In line with NAFF's achievements in the area of co-management of the marine natural resources in collaboration with the 14 resource co-management committees, the project could explore the possibility of implementing, in collaboration with the fishermen's associations, a co-management credit delivery framework that promotes sustainable resource utilization and conservation. IFAD has already successfully implemented such a co-management credit delivery framework in the Gaza Strip, Palestine, under the Relief and Development Programme in partnership with CARE, the Arab Bank and the artisanal fishermen cooperative, the Al-Tawfik Fishermen's Cooperative. Criteria for the selection of investments should include the potential to increase employment and generate income for poor households, either directly by increasing their assets and incomes or indirectly by improving marketing modalities for their output. The technologies on improved fishing and processing promoted by the project for implementation link the extension directly to a credit package tailor-made to needs and capacities of fishermen and processors in the area.

55. Another important lesson that may be drawn in relation to the implementation of the microcredit scheme is that the coalition in project activities with suitable local and/or international NGOs, such as CARE, with hands-on experience in mobilizing and empowering rural communities, and in particular women, could generate in a cost-effective manner added value for the benefit of rural poor. Experienced NGOs could provide a sustainable link between the private sector and the fishing communities in terms of inputs and marketing opportunities, facilitate the use of modern technologies and supply technical support and extension, with a view to optimizing costs, promoting sustainability of such services and ultimately relieving the Government of the burden of a big and costly extension service.



G. Empowerment of Communities

56. Although Mozambique had little experience with and no tradition in community participation and a political culture that originally discouraged it, NAFD has demonstrated that it is possible to successfully promote empowerment of local communities to enable them to identify, plan and manage their resources; interact with members and influence policy; and take over the management of their affairs. The project has been instrumental in the formation of 142 community committees and organizations that have been actively participating in implementing project activities corresponding to the needs of the communities. The established institutional dialogue and linkages between committees and fishermen's associations, on the one side, and formal management bodies, including the Fisheries Administration, on the other, have been an important part of the empowerment of stakeholders. The successful experience of NAFD in empowering the stakeholders provides a model to be replicated in other communities and geographical areas of the country.

57. However, the practical experience and lessons learned from other community development projects such as the M'putine primary school is that community development is a slow and difficult process and emphasis needs to be given to understanding the complex socio-political fabric of the communities in the project area. In other instances, such as the Quinga road and invariably FFPI credit, NAFD failed to instigate effective communication with communities, which hindered implementation and at times raised false expectations that undermined project credibility. New associations and organization require a significant amount of assistance with the bureaucratic process of formalization and registration. Institutional support and training to such bodies is perceived as important not only to capacity-building, but also to the establishment of realistic goals and targets.

58. The project has made a serious attempt to empower women by integrating them into community committees and other project activities. Women were able to join credit and savings associations but have been active particularly in savings and in water committees. However, their integration into the development process proceeds at a very slow pace.

59. The empowerment process still requires formalization, legal status and recognition by the authorities. There is need to improve the institutional and legal framework for the establishment of community committees and co-management organizations, including the definition of competence and authority and the establishment of the institutional structure for dialogue and decision-making with the fisheries administration.

H. Rural Infrastructure

60. The rehabilitation of tertiary roads has been shown to be a valid aspect of both commercial and community development. However, insufficient attention has been paid to the issue of longer-term road maintenance and particularly to the fact that without such maintenance it will be difficult to realize the project's objectives (i.e., increasing income levels, employment-generation and food security). A lack of maintenance of the project roads will also affect the provision of health services linked to medical centres, make school inaccessible, and cause an overall reduction of the exchange economy's performance due to the reduced access of fishing communities to traded commodities. The beneficiary communities feel that the feeder roads are public goods and their maintenance should be the responsibility of the government, and there is clearly further work to be done to secure any long-term benefit from these investments should the State be unable to fulfil this expectation.



I. Artisanal Fisheries from Project to Subsector Investment Programme

61. NAFFP has validated the effectiveness of the integrated cross-sectoral methodology by targeting concurrently institutional, functional, technical, commercial and social components. The institutional targeting was directed towards strengthening the capacity and promoting the formation of community-based organizations as a medium for self-mobilization for development purposes. Functional targeting was directed towards removing single or multiple critical constraints to artisanal fisheries development, namely the supply of inputs, the provision of credit and the development of infrastructure. Another ingredient is the primacy of market linkages between the fishermen and the private sector in input distribution and the marketing of fish and fish products. The lesson to be drawn is that development investments will have a far more reaching effect and impact if the strategies shift from a narrow project focus to a wider sectoral integrated programme approach. Such a shift of the artisanal subsector investment programme would be consistent with current concerns in IFAD with a shift in development planning towards a wider programme approach. Individual projects would address specific objectives within the larger programme.