

ASIAN DEVELOPMENT BANK

PPA: PHI 17152

PROGRAM PERFORMANCE AUDIT REPORT

ON THE

**FISHERIES SECTOR PROGRAM
(Loans 971-PHI[SF]/972-PHI)**

IN THE

PHILIPPINES

December 1999

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BASIC DATA
Fisheries Sector Program (Loans 971[PHI] and 972-PHI)

PROGRAM PREPARATION

TA No.	TA Name	Amount (\$)	Approval Date
927-PHI	Fisheries Sector Program	\$284,000	28 Nov 1987

KEY PROGRAM DATA (\$ million)	As Per ADB		Actual
	Loan Documents		
ADB Loan Amount/Utilization			
Loan 972-PHI(SF)1	50.0		52.4
Loan 972-PHI	30.0		30.0
ADB Loan Amount/Cancellation	-		-

KEY DATES

	Expected	Actual
Appraisal		29 May-20 Jun 1989
Loan Negotiations		28-30 Aug 1989
Board Approval		Sep 1989
Loan Agreement		5 Oct 1989
Loan Effectiveness	3 Jan 1990	8 Nov 1989
First Disbursement	8 Nov 1989	15 Nov 1989
Loan Closing	31 Mar 1993	31 Dec 1995
Program Completion		Nov 1996

BORROWER Republic of the Philippines

EXECUTING AGENCY Department of Agriculture

MISSION DATA

Type of Mission	No. of Mission	Person-Days
Fact-Finding	1	108
Appraisal	1	115
Inception	1	3
Special Loan Review	2	8
Loan Review	6	178

ADB = Asian Development Bank.
1 Equivalent to SRD39.769 million.

Program Completion
Postevaluation

1
1

28
69

EXECUTIVE SUMMARY

The Fisheries Sector Program loan was provided in 1989 to support the Philippine Government's efforts to address the problems and constraints in the fisheries sector. The sector was facing problems such as overfishing, illegal and destructive fishing activities, siltation and pollution of coastal waters, weak institutional and management capabilities, rapid depletion of fisheries and marine resources, and persistent poverty among municipal fisherfolk. The Program consisted of a series of policy and institutional reforms required to improve productivity, incomes, equitable distribution of returns, and the sustainable management of sector resources. These reforms were supported by a variety of activities involving the public and private sectors, to undertake coastal community development, ecological assessment, income diversification, and law enforcement. It was envisaged that the Program would rehabilitate the ecological status of the coastal zone, reduce poverty among fisherfolk, and improve sector productivity.

Two loans were provided by the Asian Development Bank (ADB), one from its ordinary capital resources for \$30 million and the other from its Special Funds resources for \$50 million equivalent. In addition, the Overseas Economic Cooperation Fund of Japan provided \$80 million equivalent as cofinancing. ADB also provided a \$900,000 technical assistance grant to support institutional strengthening of the fisheries sector. The Department of Agriculture (DA) was the Executing Agency for the Program. The Bureau of Fisheries and Aquatic Resources, Department of Environment and Natural Resources, Agricultural Credit Policy Council, and Philippine Fisheries Development Authority are the key program Implementing Agencies.

The Program supported four major policy reform measures: (i) control of fishing license issuance and reforms on fishpond lease agreements (FLAs), (ii) decentralization of municipal water management to local governments, (iii) enactment of municipal fishery ordinances, and (iv) provision of trade incentives and privatization of fishing ports. While the Government adopted a policy to control the issuance of fishing licenses based on maximum sustainable yield (MSY), as well as to reform the FLAs by changing the economic rent on the lease, the implementation of these two measures was not satisfactory. Fishing licenses continue to be issued by local governments without any consideration of the available resources. The Program was not able to develop appropriate MSY indicators in each of the priority bays, this proved to be a major constraint. The Government attempted to charge an economic rent for the FLAs by increasing the fee from ₱50/hectare (ha)/year to ₱1,000/ha/year, but this was prevented by a court injunction that resulted from strong opposition by commercial operators.

Policy reforms on decentralization, enactment of fishery ordinances, and privatization were more successful. The enactment of the Local Government Code in 1991 granted the local government units (LGUs) exclusive authority to grant fishery privileges in the municipal waters as well as to impose rentals, fees, or charges. LGUs were also able to enact fishery ordinances and passed legislation for coastal fishing management. Many of the fishing port assets and pieces of equipment were privatized or leased to the private sector.

The investment component provided funding to undertake activities in fishery resources ecological assessments, coastal resource management (CRM), resource regeneration activities, enforcement of fisheries law, research and extension, provision of credit to support income diversification and to intensify aquaculture production, and provision of infrastructure and marketing support. The performance of these investment activities was mixed. The fishery resources

ecological assessments were conducted, but the cross-sectional data obtained were not adequate to derive indicators of MSY. The CRM component was not successful in developing alternative livelihood projects for fisherfolk, although there is now widespread awareness and concern for CRM issues confronting the priority bays. At program completion, 52 fish sanctuaries and about 3,000 artificial reefs were established (exceeding the appraisal targets). However, only 7,000 ha of mangroves were rehabilitated. This was significantly lower than the appraisal target of 30,000 ha. The strict enforcement of fishing laws has generally resulted in the reduction of illegal fishing. For research and extension, the National Fisheries Research Program was created in 1992, linking 13 research institutions throughout the country. While the research program provided a focus for fisheries research, its long-term impact is not yet established. The Program also provided substantial infrastructure (fishing port rehabilitation) and marketing support to the fisheries sector throughout the country.

The policy directions established under the Program provided the much-needed framework for the Government's initial systematic efforts to address the problems and constraints affecting the country's fisheries sector. The policy framework continues to be appropriate. The policies formulated continue to guide and influence the thinking of the country's senior Government policymakers, planners, and legislators for the fisheries sector. The Program successfully increased the awareness of Government policymakers, planners, and legislators, as well as local communities and the general public, of the value of the fisheries resources, and the urgent need to conserve and protect these resources for the benefit of present and future generations. The Program likewise laid the foundation for cooperative, community-based resource management, and mobilized various stakeholders for participatory decision making. The decentralization of authority over municipal waters allowed LGUs to enact municipal ordinances and enforce fisheries laws within their own jurisdictions, leading to a reduced incidence of illegal fishing activities, and the subsequent regeneration of fishery and marine resources in the priority bays. It also allowed LGUs to actively participate in CRM activities and to develop CRM plans suited to their needs, resource capability, and the capacity of coastal communities. However, the program implementation activities need strengthening to be effective in realizing the program goals.

The Program served as a significant learning experience for all the organizations and institutions that participated in its implementation. It was a massive pioneering effort that mobilized almost all offices of DA, LGUs, fisheries research institutions, and the nongovernment organizations, in carrying out various program activities. As a consequence, the Program strengthened the capabilities of the participating institutions, particularly the Bureau of Fisheries and Aquatic Resources and LGUs, and of individual technical personnel in different fields of specialization and in program management. The implementation of community-based CRM by a number of NGOs has also undoubtedly benefited these organizations in an area previously unknown or alien to them. Fisherfolk operating on a small scale, including women, are more aware of the need for CRM and are more involved in the implementation of community-based CRM plans.

The Program contributed to coastal environment improvement in some localized areas. Greater biodiversity, larger catches of fish, and the return of economically important fish species not seen for years prior to program implementation in the priority bays were reported by many municipal fisherfolk. These effects were attributed to the establishment of artificial reefs, and fish and marine sanctuaries; the improved community-based law enforcement; and the intensified public education and awareness campaign, which created a strong base of political support for CRM at the local level. Mangrove reforestation minimized the use of baby trawls in municipal waters, as boats could no longer enter the mangrove areas to fish. The reforested mangrove areas provide breeding and nursery grounds for fish, shells, and coastal birds, as well as help control soil erosion and siltation.

While the Program created substantial positive contributions to the fisheries sector, there were setbacks in program implementation. The program components were complex; too many activities were implemented by different agencies that were not properly coordinated. LGU funding was not adequate, and the available administrative and technical resources at the provincial level were not commensurate with the program activities. These, coupled with the lack of a specified time frame for achieving targets, resulted in overambitious program targets. For example, the use of MSY as an indicator for policy measures to control fishing effort in coastal waters was impractical. Not only was MSY measurement not possible within the program implementation period, but the fisheries resource and ecological assessments did not provide sufficient time-series data to arrive at reliable MSY estimates. The goal of establishing and rehabilitating 30,000 ha of mangrove within the program period was unrealistic, given DA's existing resources and capability. The projected area of mangrove area to be reforested should have been adjusted to a more realistic level during program implementation when it became apparent that the original target could not be attained within the program period. Yield targets of brackishwater fishpond operators were likewise set too high considering the difficulties faced by the operators for (i) timely availability of credit, (ii) weak technical knowledge, and (iii) scarcity of fish fry. LGU capability is still generally weak; this hampers LGU efforts to develop effective CRM plans and enforce laws to control illegal fishing. In addition, the Program's income diversification component was not effectively implemented and failed to move fisherfolk involved in overfishing to other types of land-based livelihood activities as envisaged. The credit component intended to help individual fisherfolk was mostly extended to larger commercial fishing operators who were able to meet the collateral requirements of the participating financial institutions. Many problems were also associated with NGO performance. Many community organizers were recruited from outside the village, and their work was not continued once funding was terminated. NGOs lacked administrative and technical capability to help fisherfolk develop feasible alternative livelihood projects and to avail of the credit provided by the Program.

The Program constitutes the first comprehensive strategy of the Philippine Government to address the most pressing problems of the fisheries sector. Its accomplishments were not so much in the more tangible and quantifiable terms of applied fisheries management as in the more fundamental process of laying the foundations for sectoral change and responsible resource management. The Program demonstrated the value of, and benefits arising from, close cooperation between the Government and ADB in designing and implementing important sector programs. In view of the problems in implementing some of the key policy reform measures for the fisheries sector, and the mixed results in the investment components, the Program is rated as partly successful.

The main lesson learned is that when formulating policy reforms, a comprehensive review and analysis of the sector followed by continuing policy dialogue over an extended period are important parts of the process. Attention must also be given to the appropriateness and timing of targets established to meet policy objectives, as well as to policy implementation. The design of projects with a policy reform component should (i) incorporate measures to help attain policy objectives (e.g., information and education campaign); and (ii) allot sufficient time for the social and technical preparation of those who will be affected by, or involved in, policy implementation. Political will must also be strengthened, and an active constituency built based on sustainable development, resource management, and conservation to ensure the implementation of policies formulated to bring about sector reform. Also, similar programs that are broad in scope, and have complex and dynamic parameters should be designed using a phased development approach to allow for progressive understanding of changing conditions in the program area.

With the devolution of central Government functions to LGUs, the planning, design, and implementation of similar programs/projects should involve the LGU(s) with jurisdiction for the

proposed activity. LGU involvement in the early stages of project planning and design will encourage and strengthen their support for program activities, and provide a mechanism for determining and delineating responsibilities during program implementation. Such a strategy will also enhance the effectiveness and efficiency of project execution, and result in maximum benefits as a result of better coordination and cooperation of the national agencies and LGUs.

I. BACKGROUND

A. Rationale

1. In the 1980s, the Philippines fisheries sector ranked twelfth in world fish production, with an average annual growth rate of about 4 percent during 1979-1988. The value of production was growing at a rate of about 16 percent per year (Appendix 1). Overfishing and resource depletion were widespread in the country's major fishing grounds. Open access practice in coastal waters fishing, rampant illegal and destructive fishing, and pollution and siltation of once-productive fishing areas were largely to blame. Poverty was persistent among fisherfolks in the coastal areas.

2. Prior to the Philippines Fisheries Sector Program loan² in 1989, there was no clear policy and legal framework to define sectoral needs and priorities; nor any time-bound action plans, programs, or investments to support the sector. The fisheries sector faced other problems as well: (i) weak institutional capabilities to design a policy framework, implement resource management programs, and enforce fisheries laws and ordinances; (ii) lack of a good technical information base for policy development and resource management; (iii) low aquaculture productivity due to nonintensive production methods; (iv) lack of technology and difficulty in accessing credit for capital and operating expenses; and (v) large postharvest losses as a consequence of poor and inadequate access to postharvest facilities, and lack of cold storage facilities and quality control standards. The need to strengthen and improve the capacity of the sector was urgent.

B. Formulation

3. The Fisheries Sector Program was designed as the initial phase of systematic Government efforts to rehabilitate the ecological status of the country's coastal zone, reduce the extensive poverty prevalent among fisherfolks in the sector, and enhance sector productivity. The Program was formulated in 1988 under an Asian Development Bank (ADB)-financed technical assistance (TA) study³ of the Philippines fisheries sector. The TA report highlighted the sector's problems, issues, and opportunities; and formulated a development plan and program to address major sector concerns through policy and institutional reforms and an investment program. The Program was designed with the knowledge that past problems in fisheries management were brought about by inappropriate management policies, a heterogeneity of development priorities of national agencies, weaknesses in policy enforcement, and the general lack of people participation in the decision-making process. Moreover, program design took into account the immensity and complexity of key sector issues requiring solutions from both within and outside the sector.

C. Objectives and Scope at Appraisal

4. The Program was designed to address the following priorities: (i) for coastal fisheries—the regeneration, conservation, and sustainable management of aquatic resources; rehabilitation and protection of the marine environment; and poverty reduction for municipal fishers in coastal

² Loans 971/972-PHI: *Fisheries Sector Program*, for \$80 million, approved on 26 September 1989.

³ TA 927-PHI: *Fisheries Sector Program*, for \$284,000, approved on 26 November 1987.

communities; (ii) for aquaculture—the improvement of aquaculture productivity within ecological limits; and (iii) for offshore/commercial fisheries—the inducement of commercial fishing away from overfished coastal waters and into the underexploited offshore areas. The Program consisted of a series of policy and institutional reforms to improve production, productivity, and incomes; as well as to ensure equitable distribution of returns and sustainable management of sector resources. The reforms were supported by a variety of special investment activities by both the public and private sectors, including coastal community development, ecological assessment, income diversification, and law enforcement. Details of policy and institutional reform, and the investment program targets and achievements are given in Appendix 2.

5. Program implementation was carried out in 12 priority bays (of 26 major fishing areas) for its marine focus, and six priority regions for its aquaculture focus. These 12 bays are Manila Bay, Calauag Bay, San Miguel Bay, Tayabas Bay, Ragay Gulf, Lagonoy Gulf, Sorsogon Bay, Carigara Bay, San Pedro Bay, Ormoc Bay, Sogod Bay, and Panguil Bay. The six priority regions for aquaculture development are regions I, III, IV, V, VI, and IX (Map).

6. The Program was implemented by the Department of Agriculture (DA) as the Executing Agency. Program activities were grouped by component and implemented by different Implementing Agencies (IAs) with support and assistance from a program management office headed by a program director. The IAs included several DA agencies: Bureau of Fisheries and Aquatic Resources (BFAR), Philippine Fisheries Development Administration, Bureau of Agricultural Statistics, Agricultural Credit Policy Council, and DA regional offices. Other Government agencies involved in program implementation included the Department of Environment and Natural Resources, Department of Public Works and Highways, Land Bank of the Philippines, Development Bank of the Philippines, Philippine Crop Insurance Corporation, Quedan Corporation, Guarantee Fund for Small and Medium Enterprises, and local government units (LGUs). Nongovernment organizations (NGOs) also played an important role in program implementation.

D. Financing Arrangements

7. In September 1989, ADB approved two loans to finance the Program, including SDR39.769 million (\$50 million equivalent) from its Special Funds resources and \$30 million from its ordinary capital resources. In addition, the Overseas Economic Cooperation Fund (OECF) of Japan also provided \$80 million equivalent as cofinancing. The loans became effective on 8 November 1989. ADB also provided TA⁴ to support institutional strengthening of the fisheries sector. The loans were to be used to finance part of the foreign exchange cost of inputs, equipment, and services imported for fisheries sector development during 1990-1992. The peso counterpart funds generated by these loans were to be used to finance part of the local currency costs of program investment activities.

8. The Program was to be implemented over five years from 1990 to 1994, with an expected loan closing date of 31 March 1993. However, the loans were actually closed in December 1995, after two extensions, to provide additional time for the completion of physical activities such as mangrove rehabilitation and fishport construction.

E. Program Completion Report

9. The Program was closed in December 1995. The program completion report (PCR)

⁴ TA 1208-PHI: *Institutional Strengthening in the Fisheries Sector*, for \$900,000, approved on 26 September 1989.

prepared in December 1996, concludes that the Program was effective in establishing a sound policy framework for the regulation of fishing effort within sustainable limits. In turn, this helped reverse the trend of overfishing and coastal resource depletion, and shifted sector focus from increasing fish production to coastal resource management (CRM). It also reported that the Program successfully laid down an institutional foundation for fisheries resources management; addressed urgent sector needs, such as coastal resource rehabilitation and poverty reduction; and initiated various income diversification activities that provided supplementary income to marginal fisherfolk.⁵ The PCR states that the physical targets of the Program were largely achieved, and the loan covenants, generally met. Overall, the PCR rates the Program as generally successful in implementing policy and institutional reforms in the Philippines fisheries sector. However, the PCR does not provide in-depth analysis of the implications of various policy measures. For example, there is no discussion of the failure to use maximum sustainable yield (MSY) as a proxy for the control of fishing licensing issuance, and of issues relating to fishpond lease agreements. The PCR also does not provide adequate analysis of the impact of the credit component on poverty reduction and on helping finance alternative livelihood projects.

F. Postevaluation

10. This program performance audit report presents the findings of the Operations Evaluation Mission (OEM), which visited the key program areas from 5 to 28 July 1999. It focuses on pertinent aspects of the Program and presents an assessment of its effectiveness in achieving its objectives and meeting its targets. The report also examines the relevance of the program's policy initiatives, and the effectiveness of policy reforms carried out during program implementation. The report is based on findings and observations of the OEM, a review of the PCR and relevant program preparatory and loan documents, and discussions with fisherfolk, NGOs, and concerned officials of ADB, DA, and LGU.

⁵ The poverty level in the program area was reported to have gone down from the 80 percent estimated at appraisal to 65 percent in 1995. This conclusion was based on the rapid socioeconomic survey conducted by the TA Consultant in Phase I of ADB-assisted Fisheries Sector Development Project (TA 2236-PHI).

II. RELEVANCE OF PROGRAM POLICY AND GOALS

A. Diagnosis of Sector Problems and Constraints

11. The key problems facing the Philippines fisheries sector at the time of program appraisal can be broadly categorized as (i) resource-related; (ii) socioeconomic; and (iii) policy, legal, and institutional. Resource depletion was recognized as a severe threat to sector sustainability as early as the mid-1970s when the Fisheries Decree of 1975, otherwise known as Presidential Decree No. 704 (or PD 704), was issued. This was especially true for the capture fisheries; there was general agreement that marine fish landings at the traditional municipal fishing grounds had already exceeded or were close to MSY levels.⁶ Municipal fish landings decreased from 1.14 million tons (t) in 1983 to about 1.01 t in 1993, or a decline of about 11 percent, and further to 0.92 million t in 1997 (Appendix 1).

12. Since the mid-1970s, the condition of the country's coastal and marine resources has deteriorated considerably. Rampant illegal and destructive fishing practices (e.g., dynamite fishing, cyanide poisoning, and the use of fine-meshed nets) have destroyed valuable fish habitats. The unplanned conversion of extensive areas of mangrove forests to aquaculture and other uses has also resulted in habitat loss and consequent fishery resource depletion. Other land-based activities, such as the dumping of industrial and household sewage in and around urban areas, and deforestation of rural areas, likewise contributed to the degradation of municipal marine and freshwater environments and threatened the sustainability of both fish stocks and habitats.

13. The poor condition of coastal area fisheries resources was aggravated by extreme poverty among fishing communities. This was largely attributed to the lack of alternative livelihood opportunities, and difficulty accessing credit for microenterprise development in the face of resource degradation and depletion. With limited livelihood opportunities and the intensive competition for diminishing fish resources by an increasing population of municipal fishers, coastal resources in most bay areas have either approached or exceeded MSY levels. Poverty incidence in some coastal communities reached as high as 90 percent.

14. These resource-related and socioeconomic problems were exacerbated by the lack of appropriate policy and institutional frameworks that could minimize their severity. For example, prior to the Program, the fundamental policy regulating fishing efforts within sustainable levels was not implemented. Presidential Decree 704 (1975) declared that the country's fishery resources are to be maintained in optimum productive condition through proper conservation and protection. The institutional framework for resource management was also weak. It lacked a unified mechanism for sector management; several Government agencies had responsibilities and overlapping mandates for fisheries management. BFAR, a national line agency, was given the task of managing the country's fisheries resources during the Marcos regime. It was transformed into a staff bureau of DA under the general reorganization undertaken by the Aquino administration in 1986. In the process, BFAR lost its policymaking and other functions to DA agencies. For instance, the responsibility for fisheries statistics was transferred from BFAR to the Bureau of Agricultural Statistics; fisheries research was lumped with agricultural research under the direction of the Bureau of Agricultural Research; and field offices and line functions of various bureaus, including those of BFAR, were consolidated under the DA regional offices. BFAR, however, continued to carry out some line

⁶ MSY within coastal waters was estimated within the range of 500,000-700,000 ton/year in 1980.

functions such as regulation of commercial fisheries, e.g., issuance of licenses for commercial vessels above 100 gross registered tons, and aquaculture, through the issuance of fishpond lease agreements (FLAs). It also continued to be viewed as the agency responsible for fisheries administration with the technical capability to carry out fishery management functions. The distribution of BFAR's responsibilities resulted in (i) lack of data to assess the state of fish stocks and coastal resources; (ii) lack of coordination between data collection by the Bureau of Agricultural Statistics and research work carried out by the Bureau of Agricultural Research; (iii) failure of research institutions to adequately address the real priorities and needs of fisheries management, as their respective priorities did not reflect those of the sector; and (iv) discontinuance of fisheries extension service as agricultural technicians provided services to a broader range of clients aside from fisherfolk and fishfarmers.

15. Aside from DA and BFAR, other Government departments, offices, and committees have been involved in the fisheries sector. These include four other cabinet departments: Department of Environment and Natural Resources, Department of Interior and Local Government, Department of Science and Technology, and Department of National Defense. In the course of program implementation, LGUs had to be fully and actively involved in fisheries sector management, particularly the municipal waters, with the enactment of Republic Act (RA) 7160, or the Local Government Code of 1991. This act devolved the management of municipal waters to LGUs. The transfer of responsibility from the national Government (i.e., DA and BFAR) to LGUs became another problem area as most LGUs had neither the technical skills nor the organizational capability for fisheries management. Even LGUs that had an administrative unit and personnel in place had a limited understanding of fisheries management concepts and principles, as well as of problems and issues to be addressed.

B. Relevance of Program Policy and Goals

16. Given the status of the country's fisheries resources at appraisal, the policy reforms under the Program (Appendix 2) were both timely and highly relevant to sector needs and priorities. In general, the policy directions established provided the much-needed framework for the sustainable development of the fisheries sector and continue to be appropriate. From the DA's Medium-Term Fisheries Development and Management Plan (MTFDMP) 1993-1998, and the different versions of the proposed Fisheries Code,⁷ it is apparent that the policies formulated under the Program continue to guide and influence the thinking of the country's senior policymakers, planners, and legislators for the fisheries sector. The Program's policy initiative to regulate fishing effort within sustainable levels is considered by many as a milestone in Philippines fisheries management. It aims to bring an end to the open access practice identified as the main cause of resource depletion in the country's traditional fishing grounds.

17. ADB's program goals of coastal resource rehabilitation, poverty reduction, and sector productivity enhancement, as well as the specific objectives established for each fisheries subsector have undoubtedly made significant contributions to improved fisheries sector management. Notwithstanding observed limitations and design deficiencies, and consequent implementation problems and delays (paras. 57 to 61), the Program succeeded in initiating the long and arduous process of reforming the sector, and reversing the trend of resource depletion. The initiation of policy and institutional reforms were extremely timely, considering the condition of the fisheries resources and the Government's institutional capacity at appraisal. Program goals remain relevant, but more effective implementation of identified resource management measures (i.e., fisheries

⁷ For details of the Fisheries Code, see TA 1208-PHI: *Institutional Strengthening in the Fisheries Sector*. Final Report. December 1991.

licensing, law enforcement, income diversification, and credit provision) is required to fully attain these goals.

18. On the other hand, the Program could have been more successful if its strategic objectives had focused on the coastal fisheries subsector, given the severity of its problems, rather than attempting to simultaneously address problems in the aquaculture and commercial fisheries subsectors. Moreover, the Program's policy and institutional reform, resource recovery, and socioeconomic improvement objectives are very difficult to attain within the designated time frame of five years.

III. IMPLEMENTATION PERFORMANCE

A. Policy and Institutional Reforms

1. Issuance of Fishing Licenses and Fishpond Lease Agreement Fees

19. In 1990, the Government attempted to officially adopt a policy under the proposed Fisheries Code to control overfishing in coastal waters by issuing fishing licenses based on MSY measurements. These measurements were to be supported by data to be generated through resource and ecological assessments (REAs) and subsequent MSY estimates in each of the 12 priority bays. However, the Fisheries Code was not enacted until eight years later, in 1998, and, although the REAs were completed in the 12 priority bays under the Program, no MSY indicator was derived (Appendix 2, page 1). Therefore, fishing licenses continue to be issued by municipal governments based on demand considerations and not on MSY estimates. Moreover, the lack of enforceable legal instruments, in conjunction with strong opposition from various interest groups, hamper implementation of the proposed changes for fisheries licensing.

20. Another aspect of reform is to regulate fishpond development. FLA reform is currently ongoing. A 1991 survey of six aquaculture regions indicated that about 15 percent of the leased area was underdeveloped. FLAs for over 3,000 hectares (ha) of idle and unproductive fishponds were canceled. In 1992, FLA fees were adjusted to reflect economic values; fees were increased from ₱50/ha/year to ₱1,000/ha/year. The Fisheries Administrative Order was issued to increase the rent. However, strong opposition from commercial aquaculture operators successfully brought a court injunction to stop the rental increase. Currently, FLA rentals remain at ₱50/ha/year. Based on studies conducted by BFAR, the current fees paid for the privilege of using fisheries and fisheries-related resources are significantly below what the scarcity of the resource and its long-term value demand. While the 1998 Fisheries Code provides for a staggered increase of the FLA fee in the future, implementation will require greater LGU political will.

2. Decentralization

21. Policy reforms to decentralize management of municipal waters and provide preferential treatment for municipal fisherfolk to use municipal waters were achieved with the enactment of the Local Government Code in 1992. This allowed LGUs to enact various municipal fishery ordinances to regulate and conserve fishery and marine resources, enforce fishery laws, and control illegal fishing. However, some provisions of the Local Government Code were not clear on how the management of bay ecosystems, which require coordinated and cooperative management by various concerned LGUs, should be carried out effectively and sustainably. This limitation is addressed by Executive Order 240, which calls for the organization of bay management councils (BMCs), which were subsequently replaced by fisheries and aquatic resources management councils (FARMCs) with jurisdiction over several cooperating LGUs within the same bay (para. 32).

22. While the Government has succeeded in decentralizing the management of municipal centers to LGUs, most LGUs have not been effective in implementing needed measures. The OEM observed that while most LGU officials are convinced and enthusiastic about the need for resource management, they do not have adequate funds to carry out effective resource rehabilitation, income diversification, and law enforcement activities. In some cases, the local political system also prevented the mayors from undertaking tough measures to control illegal fishing by commercial fishing boats in the coastal waters. There was one instance where the mayor, who strictly enforced the program policy to control overfishing, was voted out of office because of the influence of certain vested interest groups in the local commercial fisheries subsector. This has certainly hampered the momentum of the reform process in some localized areas.

3. Enactment of Municipal Fishery Ordinances

23. To date, 117 of the 128 municipalities in the program bays have approved fishery ordinances (Appendix 2, page 1). A few municipalities have passed ordinances on licensing, declaration of fish sanctuaries, and closed fishing seasons. Municipal cooperation involved in the BMCs of Calauag, San Miguel, and Carigara bays has also become stronger. This is reflected in their implementation of a unified municipal fisheries ordinance, for their respective bays, calling for law enforcement, CRM, and regulation of fishing activities. However, there is still no municipal ordinance to impose a quantifiable limit on fishing activities. The real test of LGU commitment as nearshore fisheries managers is in their political will to effectively control nearshore fishing. In the near term, this means a unified enforcement of the ban on commercial vessels in municipal waters⁸ and strict enforcement

⁸ This was implemented in some municipal waters but to be effective, enforcement must be carried by all municipalities

of measures to reduce the number of municipal fisherfolk. In practice, elected LGU officials would find this task very difficult because of the political consequences of enforcing a limited access policy for municipal fisheries.

4. Privatization and Trade Incentives

24. The operation of regional fishing ports continues to be the responsibility of the Philippines Fisheries Development Administration (Appendix 3). Of the six refrigeration facilities set up under the Program, five were leased to the private sector and one (i.e., Kalayaan) was turned over to the LGU. Most municipal fishing ports have insufficient funding for operation and maintenance, and have resorted to diversifying their operations (e.g., chicken processing in Puerto Princesa) to sustain themselves. The Program was to extend trade incentives and reduce tariff rates on imported fishing vessels, spare parts, and equipment. The objective was to encourage commercial fishing fleets to move to the underutilized offshore areas. This was not effectively implemented mainly because of the concern for the potential loss of Government revenues. Most tariffs, duties, and taxes of imported fishing gear have not been revised.

B. Investment Components

1. Fishery Resource and Related Ecological Assessments

25. The REAs were intended to produce data to enable the definition of acceptable fish catch levels by establishing MSY in all bays. This would, in turn, guide the implementation of legal measures to limit fishing effort. However, this did not materialize. The feasibility of determining MSY became questionable because the limited time frame for data gathering and the inadequate data processing software to derive reliable estimates. Due to difficulties with estimating indicator(s) for MSY, other parameters (such as biomass, catch per unit effort, and catch size distribution ratios) are being developed to define the sustainable extraction levels for the available resource base. These were generated based on the REAs, and provided the basis for the current formulation of bay-specific CRM plans. However, the information generated by the REAs is largely outdated, and a periodic update of the REA data is needed. At program completion, the CRM plans were still being finalized and have yet to be used as the basis to control fishing effort in the priority bays.

26. Aquaculture development plans were developed based on the ground survey of fishponds covered by FLAs in the six aquaculture regions in 1991. Under the Program, milkfish productivity increased from about 1 t/ha/year to about 1.6 t/ha/year, significantly below the 3 t/ha/year envisaged under the Program. This was mainly because most of the fishpond operators were not able to shift from extensive to intensive culture. To be able to do so, they need (i) regular TA in semi-intensive culture (e.g., training, demonstration, information dissemination, production techniques); (ii) ample and regular supply of fish fry; (iii) credit for the purchase of inputs, especially commercial feeds; and (iv) marketing assistance. Many commercial operators have adopted the semi-intensive culture of rearing milkfish. The Program advocated the use of intensive culture, but without providing adequate analysis of the inherent risk factors. The adverse effects of high-density intensive culture on the environment, as demonstrated by shrimp culture, have drawn attention to the need to address issues that pose a threat to sustainable production, such as high-stock densities, cage proliferation

in a unified manner.

in lakes and rivers, discharge of effluents, and organic loading of waterbodies due to excess feeds and fish excrement.

27. For information system development, a database containing all the information on tuna population, and statistics on tuna catches and landings was incorporated into the National Fisheries Information System, now referred to as Philippine Fisheries Information System, which was established under the Program. As more data and information are gathered, the system needs upgrading as the data processing software is no longer adequate to handle the required tasks.

2. Coastal Resource Management

28. CRM was the main strategy used to address the Program's resource rehabilitation objective, and constituted the core component of the Program. Although most of the priority bays had not finalized their CRM plans at the time of program completion, the CRM formulation process involving the local communities and other stakeholders continues to be carried out based on resource management. This has led to widespread awareness and concern for management issues confronting the priority bays. The CRM approach to bay development resulted in significant dissemination of bay management information, education, and communication to fisherfolk, and is repeatedly cited as one of the Program's significant achievements. The Program's public education campaign was effective in making the communities and LGUs better understand their roles in resource management, and in securing their commitment to efficient resource use.

29. NGOs were recruited to undertake community organizing work and help fisherfolk develop alternative livelihood projects to enable them to minimize fishing effort (Appendix 4). Most villages under the Program benefited from the NGO assistance, and formed their own organizations such as cooperatives, bantay dagat (bay-watch volunteer groups), and other form of people's organizations. The people's organizations enabled the community to participate in the implementation of CRM plans. NGOs have, in most cases, performed a useful task in community organization. However, certain problems emerged involving their role. For example, the transfer of activities from NGOs to LGUs at the end of the Program encountered difficulties due to the lack of a phaseout and turnover plan. The hiring of nonlocal NGO personnel to do community organizing work created resentment among LGU personnel who perceived that they could do the work better themselves. Most NGOs lacked technical expertise to help develop alternative livelihood projects.

30. The Program's income diversification efforts were helpful to the individual families who were able to avail of credit assistance for microenterprise development. However, even in those bays where awareness was relatively high, no arrangements were made to ensure that livelihood opportunities were being offered as substitutes for existing fishing activities. As a result, most fisherfolk viewed these opportunities simply as a means to increase their income, rather than a means to get out of fishing as a primary occupation. In some bays (e.g., Calauag, San Miguel, Carigara), alternative livelihood projects (such as hog fattening, poultry raising, mudcrab fattening, and fish cage culture) were initiated, but were not sustained due to the high cost of production, difficulty in sourcing fry and crablets, and high risk of loss due to typhoon damage.

31. Some LGUs have continued the alternative livelihood efforts initiated under the Program by introducing mariculture (seaweed culture) in the priority bays. These LGUs (currently few in number) have encouraged fisherfolk to engage in this profitable livelihood project (as shown by pilot projects) by providing planting materials, demonstration plots, TA, land, and limited financial assistance. The low level of investment requirements, the high return on investment, and the ease in marketing dried seaweed are expected to contribute to its sustainability and production expansion for local and export markets in the future. Initial success with seaweed culture in Calauag Bay has stimulated

much interest among other fishfolk, and this could develop into a potential alternative livelihood project by LGUs. Research is needed on cultivation techniques, disease prevention and control, variety selection, pricing and marketing, and large-scale production of seaweeds in areas suitable for its cultivation.

3. Bay Management Councils

32. BMCs were formed to jointly manage the fishery and aquatic resources, and to resolve issues relating to bay-wide resource management by all concerned municipalities in a priority bay. BMCs comprise various stakeholders, including NGOs and mayors of the coastal municipalities bordering a bay. The performance of BMCs is mixed. Most of the BMCs ceased to function after program completion due to lack of clear understanding of the appropriate roles of BMCs, weak leadership, and inadequate funding. Although the 11 BMCs envisaged under the Program were formed, these BMCs did not function effectively. There was a lack of unified bay management as BMC members were more interested in the measures concerning their own municipal waters and did not cooperate fully with others in implementing necessary resource management measures. Since their establishment in 1990, few activities took place. In view of the importance of CRM activities, and the need for an entity to implement and monitor CRM, an LGU initiative resulted in a Presidential Order in 1995 to mandate the creation of a FARMC (para. 21) in all coastal villages and coastal municipalities. This institutionalized the role of fisherfolk in CRM planning and implementation. Thus, FARMCs were established to replace the BMCs at the end of the Program. FARMCs are managed by people's organizations and supported by LGUs. The establishment of FARMCs has been slow, but discussions with officials of the established FARMCs during the OEM indicated that the officials are enthusiastic about CRM activities. However, their effectiveness has yet to be determined.

4. Resource Regeneration Activities

33. At program completion, 52 fish sanctuaries covering an area of more than 10,000 ha were established and monitored, exceeding the 12-20 sanctuaries targeted at appraisal. The Program also established about 3,000 artificial reef modules (Appendix 2). These fish sanctuaries, as well as the artificial reefs set up under the Program became good marine breeding grounds and helped regenerate marine resources. However, proper maintenance and sustainability of these structures have yet to be determined. The Program also established and rehabilitated about 7,000 ha of mangroves, significantly less than the 30,000 ha envisaged at appraisal (Appendix 5). This was mainly due to the lack of supply of mangrove propagules, bad weather conditions, and lack of qualified NGOs and local staff to manage the reforestation work. In addition, the fundamental shift in the approach of the Department of Environment and Natural Resources (from contract-based to NGO-assisted and community-based) and focus (from reforestation to management) midway through program implementation further contributed to poor results.

5. Fisheries Law Enforcement

34. Illegal fishing was a main contributor to the destruction of fish-breeding grounds (coral reefs) and depletion of marine resources. About 60 patrol boats and equipment were provided under the Program for law enforcement. Anecdotal reports of fishers and LGU staff indicate that increased enforcement of fisheries laws and vigilant monitoring of illegal fishing by bantay dagat groups and deputized fish wardens in local LGUs have reduced the incidence of illegal fishing activities in the

priority bays. This has resulted, in turn, in the regeneration of certain fish species (e.g., slipmouths and sardines). At program completion, about 80 bantay dagat groups were formed in the 12 priority bays to patrol the municipal waters. Law enforcement was also supported by municipal fisherfolk reporting to the authorities on illegal fishing activities. However, illegal fishing activities continue in some bays due to LGU limitations, such as inadequate funds, human resources, equipment, and technical capability for law enforcement. Lack of communication equipment was a major factor for weak law enforcement in some municipal waters, and periodic typhoons destroyed many patrol boats. The situation is aggravated by weak linkages between the Presidential Committee on Anti-illegal Fishing and Marine Conservation and the field implementing units. Other constraints pertaining to law enforcement are that the LGUs have inadequate legal support, and penalties or fines for violators are not high enough to deter the violators from repeating the offense.⁹ Many court cases involving illegal fishing (third-time offenders) dragged on for years, and this frustrated the law enforcers. In many cases, the mayor was forced by a higher authority to release fishing equipment and gear that were confiscated by the law enforcers.

6. Research and Extension

35. Under the Program, the National Fisheries Research Program was created in 1992 linking 13 research institutions throughout the country. The research program provided a definite focus for fisheries research and fostered institutional cooperation and coordination in the conduct of research studies. More than 120 fisheries and aquatic research projects were funded during the Fisheries Sector Program period. The periodic dissemination of findings of aquaculture research also contributed to greater awareness of priority aquaculture concerns within the sector, and helped increase and upgrade the knowledge of extension workers. Extension services had a significant impact on the aquaculture sector, where more than 2,000 fishpond operators benefited. As a result of research and extension, the average yield of brackishwater fishponds (milkfish) increased from about 1 t/ha/year to about 1.6 t/ha/year. In some localized areas where intensive culture is practiced, milkfish productivity could reach about 3 t/ha/year.

7. Credit Provision

36. The credit component provided a credit seed fund to support income diversification among marginal coastal fisherfolk, and to intensify aquaculture production. The seed fund was earmarked for onlending to targeted beneficiaries through five Government banks and financial institutions.¹⁰ NGOs were employed to help form beneficiary groups and help them identify bankable microenterprises. Although most of the \$32.7 million credit seed fund has been disbursed and repayment has so far been satisfactory at over 70 percent, the majority of the loans were extended to commercial fishing operators and fishpond operators with areas over 5 ha. Most of these loan recipients were not the targeted beneficiaries. The financial institutions had to bear the full risk of lending, and were instructed to lend out the fund as quickly as possible to meet loan conditionalities for the second tranche release in 1992. Thus, they had to resort to the imposition of collateral requirements as a requirement for credit assistance to cover the risk. This resulted in quick extension of most loans to large and well-off commercial fishing operators and fishpond operators who were able to provide the collateral. This defeated the purpose of providing credit to poor

⁹ The maximum fine allowable for the first offender is only ₱2,500.

¹⁰ The five financial institutions were (i) Land Bank of the Philippines, (ii) Development Bank of the Philippines, (iii) Philippine Crop Insurance Corporation, (iv) Quedan Corporation, and (vi) Guarantee Fund for Small and Medium Enterprises.

fisherfolk to increase aquaculture productivity and to adopt land-based microenterprises other than fishing.

37. The distribution of credit funds by type of project indicates that the total loan amount extended to aquaculture accounted for about 70 percent of the aggregate loan releases, while total amount of loans to commercial and coastal fishing accounted for about 12 percent. Another 9 percent of the total aggregate loans went to land-based alternative livelihood projects. The balance of the loans went to other categories. Of the total loans extended to commercial and coastal fishing, only about 18 percent were used for land-based alternative livelihood projects, while 82 percent were invested in fishery and fishery-related projects (Appendix 6). These loans to fishery projects have in turn, aggravated the marine resources depletion in certain bays as more powerful motorboats and modern fishing gear were purchased to harvest the coastal marine resources. In some situations, local fisherfolk and LGU wardens reported that modern fishing boats were conducting illegal fishing in municipal waters at night, and their powerful motorboats could out run the LGU patrol boats making apprehension difficult. The major problems relating to extending credit to poor fisherfolk were the inability to provide collateral and to develop feasible projects suitable for funding. The credit component is thus poorly designed and failed to take into account various constraints facing the poor fisherfolk in availing the credits from financial institutions.

8. Infrastructure and Marketing Support

38. Under the Program, 13 municipal fishing ports and five regional ports were rehabilitated. Contracts for improving 10 additional municipal fishing ports were carried out, and refrigeration and individual quick-freezing facilities were installed in 6 selected fishing ports in different areas of the country. The improvement of regional fishing ports and installation of individual quick-freezing facilities, as well as the strengthening of BFAR's postharvest and quality control capacities, generally contributed to the reduction of postharvest losses and enhancement of product quality. Interviews and discussions with fisherfolk and local fish traders indicated that the upgrading of municipal port facilities resulted in improving the quality of the fish produced by the small-scale fisherfolk, added value to their products, and enabled them to get higher prices for their catch. Improvements in the port facilities also led to the overall improvement of environmental conditions in the general area where the port is located.

C. Policy Reform and Institutional Development

39. Policy reform and institutional development were the two most significant achievements of the Program. The policy reforms instituted under the Program provided the framework for the Government's initial systematic efforts to address the problems and constraints affecting the country's fisheries sector, and continue to guide and influence policy and planning at the national and local levels. The decentralization of authority over municipal waters allowed LGUs to enact municipal ordinances, and enforce fisheries laws within their own jurisdictions. This led to a reduced incidence of illegal fishing activities, and the subsequent regeneration of fishery and marine resources in the priority bays. It also allowed LGUs to actively participate in CRM activities, and develop CRM plans suited to their needs and resource capability.

40. The Program served as an important learning experience for all the organizations/institutions that participated in its implementation. As a massive pioneering effort, it mobilized almost all offices of DA, LGUs, the major research institutions, and NGOs in carrying out various program activities. As a consequence, the Program contributed significantly to strengthening the capabilities

of the participating institutions, particularly BFAR and LGUs, and of individual technical personnel in different fields of specialization and in program management. Many NGOs have gained expertise in the implementation of community-based CRM, an area previously unknown or alien to them. Although the outcome of the program activities are less than envisaged at appraisal, the overall impact on institutional strengthening and development has been significant, given the fact that there were few or no institutions in place in the preprogram situation.

D. Disbursements and Use of Counterpart Funds

41. The ADB loan was released in two tranches, while the OECF loan was released in three. The foreign exchange proceeds of the loans were fully utilized in compliance with the list of eligible items in the Loan Agreement. Under the Program, local funds generated by the loans were to be used to finance the program investment activities, but, at the same time, were considered as part of the general fund of the Government. As a result, withdrawals from the local currency account had to follow Government budgetary procedures; this caused delays in fund allocation releases for program-related activities. Of the total ₱4.2 billion in loans released by ADB and OECF, only about ₱2.8 billion, or about 67 percent, were allocated by the Government to finance program activities and about ₱0.3 billion to other fisheries sector activities. The balance of about ₱1.1 billion, or about 26 percent, was utilized by the Government for budgetary support for nonprogram activities in the fisheries sector. The delays and budgetary shortfall affected program implementation as the magnitude and schedule of activities were subsequently adjusted to correspond to the available amount and release of funds.

E. Effectiveness of the Technical Assistance

42. During program implementation, ADB provided an advisory and operational TA for the institutional strengthening of the fisheries sector. Overall, the TA¹¹ was effective in providing immediate expert advice to DAs and the IAs on program management, as well as on highly specialized technical areas in the initial year of program implementation. The terms of reference were adequate and appropriate in identifying various constraints relating to the existing organizational structure, and highlighted the possible implementation bottlenecks for the various IAs. The TA was clearly beneficial in that it made the services of technical specialists easily available to the program implementors, especially in areas where there was limited expertise and experience (e.g., CRM; information, education, and communication; and research). The TA consultant also provided ready assistance to the program management office in the development and formulation of various guidelines for key program activities (such as the conduct of REAs and the engagement of REA contractors and NGOs for community organization), the evaluation of proposals submitted by invited bidders, and the implementation of various program activities. The TA consultant likewise conducted a comprehensive and detailed institutional assessment of the fisheries sector, and made recommendations on the appropriate organizational structure for a national fisheries agency. These recommendations, with some modifications, were eventually incorporated in the Fisheries Code of 1998, and are now in the process of being implemented. The TA is rated as generally successful.

F. Compliance with Loan Covenants

43. Most of the loan covenants were complied with, except for the reforms on fisheries licensing and FLA licensing charges, which are yet to be fully implemented. The rationalization of fisheries licensing is complicated, requiring long-term persistent efforts from all stakeholders, including Congress, other concerned Government agencies, LGUs, NGOs, and the fishing communities.

¹¹ TA 1208-PHI: *Institutional Strengthening of the Fisheries Sector*, for \$900,000, approved on 26 September 1989.

G. Monitoring

44. There was provision under the Program for monitoring the implementation of policy reform measures and major program activities relating to (i) conservation and regeneration of the coastal zone's fisheries and marine resources; (ii) changes in income and occupational diversification among small fisherfolk; (iii) intensification and exploitation of aquaculture production and deep-sea resources; (iv) law enforcement for coastal illegal fishing; (v) credit; and (vi) infrastructure support and marketing activities. A program evaluation unit was set up at BFAR to develop key parameters, and monitor each of the program activities. However, monitoring of these parameters was not adequately carried out, and the data collected was not as comprehensive as envisaged. There was no assessment of program impacts in each of the priority bays. In addition, inadequate resources in BFAR regional offices and LGUs hampered data collection and monitoring activities after program completion. ADB fielded 11 review missions over the six-year program period. The missions provided DAs and the IAs with advice and assistance in program implementation, and held discussions with LGUs, NGOs, and beneficiaries at each program site regarding critical issues to be addressed. Government staff involved in the Program acknowledged the valuable assistance and support provided by ADB to DA, and the IAs, and the program management office during the Program.

IV. PROGRAM RESULTS

A. Performance Indicators

45. The appraisal report did not indicate specific time frames for the attainment of program targets. The OEM realizes that the process of resource rehabilitation takes time and that impacts will be discernible only after a period longer than the program duration. Moreover, a number of resource enhancement measures were put in place only within the last two to three years of implementation. Thus, at best, one can only draw inferences from some reports of municipal fisherfolk on the impact of CRM activities (e.g., increased fish catches or decreased catch per unit effort in the priority bay areas, increased species, and regeneration of coral reefs). The results of postprogram work, including the post-REA surveys, can only be treated as indicative at this point.

46. The lack of a specified time frame for achieving targets also resulted in overambitious program targets. For example, the proposed use of MSY as a policy measure to control fishing effort was impractical, as its measurement was not possible within the period of program implementation, and the frequency of REA conduct did not provide sufficient time-series data to arrive at reliable estimates. Many program performance indicators were not properly derived and are impractical. For example: the projected mangrove area for reforestation (30,000 ha) should have been adjusted to a more realistic level during program implementation, as it was apparent that the original target could not be attained within the program period. Yield targets of brackishwater fishpond operators were likewise set too high (3 t/ha/year) considering the difficulties of the operators in adopting intensive fishpond culture. Using the number of apprehended fishery law violators as a performance indicator for law enforcement was not adequate, as it did not provide information on the number of illegal fishing cases successfully litigated under the legal system in the course of program implementation.

47. In terms of marine and aquaculture production, national production figures indicate that the national production trend registered an overall increase of about 10 percent from 1990 to 1997. Output from coastal municipal waters, deep-sea commercial fishing, and aquaculture increased from about 2.5 million t in 1990 to about 2.8 million t in 1997. Over the same period, deep-sea commercial fishing and aquaculture registered an increase of about 30 percent and 21 percent, respectively. In sharp contrast, municipal fisheries production declined by about 23 percent; production dropped from 1.1 million t to 0.9 million t. Details of marine production are given in Appendix 1. The figures indicate that fisheries production from municipal coastal waters is gradually declining due to depleting marine resources. There should be concerted efforts by LGUs to implement CRM plans and to adopt a greater political will to enforce fisheries laws. On the other hand, the increase in deep-sea and aquaculture production gives an indication that the program policy reforms and activities are achieving some results, although it is difficult to establish the facts at this stage.

B. Impact of Policy Measures

48. The policy measures instituted under the Program continue to provide a sound framework for the sustainable management and development of the country's fisheries sector. Although the policy initiative to regulate fishing effort within MSY limits, and to reduce the fishing effort of municipal fisherfolk by developing alternative livelihood projects were not implemented successfully, the CRM

concept introduced by the Program raised awareness of marine resources management for all fisherfolk and government officials. The decentralization of the management of coastal waters, through the enactment of municipal ordinances and enforcement of fisheries laws by LGUs, have encouraged and strengthened LGU support for CRM, reduced the incidence of illegal fishing activities, and resulted in the subsequent regeneration of fishery and marine resources in the priority bays. The improvement of regional fishing ports and installation of individual quick-freezing facilities, as well as the strengthening of BFAR's postharvest and quality control capacities, contributed to reducing postharvest losses, enhancing product quality, and providing greater access to export markets through the production of higher quality processed seafood products. Reports gathered from municipal fisherfolk included accounts of greater biodiversity and larger fish catches. These efforts were attributed to establishment of artificial reefs and fish sanctuaries, and greater law enforcement efforts made.

C. Socioeconomic Impact

49. The Program's income diversification component was not effective in diverting small fisherfolk's efforts from fishing to other types of livelihood activities. The collateral requirements of the financial institutions were difficult for poor fisherfolk to meet. The rapid appraisal survey¹² (Appendix 7) conducted by the OEM indicates that about 90 percent of fisherfolk interviewed still engage in fishing as their main source of livelihood (Appendix 7, Table A7.2). Poverty incidence¹³ among fisherfolk has decreased from 85-90 percent before the Program to 70-80 percent after the Program; income from fishing and fishing-related activities has increased slightly (such as engaging in dry-fish and vendor activities by the spouses). The contribution of alternative livelihood to household income, on the average, was less significant; only about 30 percent of the fisherfolk respondents engaged in alternative livelihood projects. These findings from the rapid appraisal survey were also supported by focus group discussions, interviews with BFAR and LGU officials, and NGOs. The credit component apparently did not have a significant impact; as the number of fisherfolk who availed of financial assistance during program implementation was less than 10 percent (Appendix 7, Table A7.2). Access by fisherfolk to support services (i.e., extension services, marketing services, and water and power supply), as well as participation in cooperative activities, has generally improved as has their quality of life, as reflected by the larger number of respondents with houses made of semipermanent and permanent materials. An increase in ownership of household appliances and motorboats/nonmotorized boats was also observed (Appendix 7, Table A7.2).

50. Involvement of fisherfolk in CRM activities, such as planning, problem solving, and participation in awareness programs, increased significantly as a result of the program's CRM activities (Appendix 7, Table A7.3). The majority of respondents perceived that the Program was effective in (i) developing CRM plans, (ii) reducing the incidence of illegal fishing activities, (iii) increasing awareness of the need for coastal resource management, (iv) providing assistance to the communities on CRM, and (v) improving the standard of living of coastal communities (Appendix 7, Table A7.4).

D. Gender and Development

¹² The rapid appraisal survey was conducted in Calauag Bay, San Miguel Bay, and Carigara Bay where 20 fishers were interviewed in each bay to compare the before and after situations for each respondent.

¹³ Poverty incidence refers to the percentage of the population earning less than ₱2,000/capita/month.

51. The OEM rapid appraisal survey¹⁴ indicates that women have become increasingly involved in both primary and secondary income activities as well as in CRM activities since the start of the Program (Appendix 7, Table A7.5). This is mainly the result of the awareness campaign carried out by NGOs in the program area. Some women have been actively involved in the planning and implementation of CRM plans, while others have been deputized as fish wardens or members of the bantay dagat task forces involved in enforcing fisheries laws and regulations in their respective municipalities. As a result of the Program, women are playing more important roles in CRM activities within their respective communities.

E. Environmental Impact and Control

52. Although the Program did not specifically indicate any specific environmental management measures, the thrust of its policy reforms and investment activities were mainly oriented to environmental improvement along the coastal areas. The PCR reported that post-REA surveys conducted in the program areas indicated positive environmental impacts of the Program. Discussions with municipal fisherfolk indicated positive signs such as greater biodiversity, larger catches of fish, and the return of economically important fish species¹⁵ not seen for years prior to program implementation in Carigara Bay, Panguil Bay, Lagonoy Bay, and Calauag Bay. Case studies carried out in Carigara Bay and Panguil Bay, as well as the field surveys under TA 5572,¹⁶ also reported increased catch per unit effort. In Carigara Bay and Panguil Bay, fish catches by fisherfolk have reportedly increased in recent years. These effects are attributed to the establishment of artificial reefs, and fish and marine sanctuaries; improvements in community-based law enforcement; and the intensified public education and awareness campaign that created a strong base of political support for CRM at the local level. Mangrove reforestation also minimized the use of baby trawls along municipal waters, as these boats can no longer enter the mangrove areas to fish. The reforested mangroves also provide breeding and nursery grounds for fish, shells, and coastal birds, and help control soil erosion and siltation.

F. Gestation and Sustainability

53. The policy directions established under the Program provide the framework for sustainable development of the Philippines fisheries sector, and their relevance continues. CRM policies and concepts were incorporated into the medium-term agriculture development plans of DA and LGUs, and institutional mechanisms for their implementation were established at the national, regional, and local levels. The national Government and some LGUs have continued to allocate funds to support CRM activities¹⁷ even after program closure. The high level of awareness of coastal communities of the need to manage and conserve coastal resources, and the cooperation of LGUs in the conduct of CRM plans through FARMCs provide a foundation for long-term sustainability of the Program's CRM

¹⁴ The rapid appraisal survey included 15 women respondents, five from each survey area, i.e., Calauag Bay, San Miguel Bay, and Carigara Bay.

¹⁵ The surveys indicated that the number of species was two and five times higher than those taken during the REA surveys in Naguindapunan in Panguil Bay and Balud in Carigara Bay, respectively.

¹⁶ TA 5572-REG: *Women in Development and Poverty Reduction Efforts in Bank-financed Projects: Review of Performance*, TA Report submitted to ADB, June 1995.

¹⁷ For example, it is being proposed that each municipality under the Ragay Gulf Management Council contribute funds for CRM activities equivalent to 10 percent of 20 percent of their respective internal revenue allocations (IRAs). Funds allocated for CRM activities will be used for the deployment of artificial reefs, establishment of fish and marine sanctuaries, law enforcement, and technical and limited financial assistance for the development of alternative livelihood projects. A great number of LGUs, however, do not have the capacity to set aside funds for this purpose.

activities. Based on the Program's experience, the CRM activities are being replicated by other international development agencies such as United States Agency for International Development, Canadian International Development Agency, Australian Agency for International Development, and the European Union in other coastal areas of the country. In view of the importance of CRM activities in achieving the program goals in the longer-term, ADB provided further assistance¹⁸ to the Government to expand the program activities to 18 priority bays, including 11 of the priority bays included in the Program. However, there is need for stronger political will in effective implementation of various measures initiated under the Program to ensure sustainability.

G. Impact of the East Asian Financial Crisis

54. The Philippine economy has been affected by the financial crisis since late 1997. The effect has been felt most noticeably in the devaluation of the currency from an exchange rate of about ₱25 to the \$1 to about ₱40 to the \$1. In the midst of the crisis in 1998, the stock exchange indices declined by about 40 to 50 percent, and market interest rates rose significantly. However, in the fisheries sector, the impact of the financial crisis has been modest, and caused no significant impact on program performance. Except for the decrease in the real value of funding for program activities and lower demand for expensive marine catches,¹⁹ postprogram activities and fisherfolk's daily harvesting routine continue unaffected.

¹⁸ Loans 1562/1563-PHI: *Fisheries Resource Management Project*, for \$35.2 million, approved on 14 October 1997.

¹⁹ Due to peso depreciation, which affected the value of imported items, and other factors such as high inflation and lower consumer demand for high-value marine catches.

V. KEY ISSUES FOR THE FUTURE

55. The Program helped create a sound system for fisheries resource management and conservation. However, several issues need to be addressed to sustain program initiatives. These include (i) weak implementation of the fishing licensing system for municipal and commercial fishers; (ii) weak enforcement of fishing laws and ordinances, and (iii) enhancement of local-level law enforcement capabilities in municipal waters; (iv) need for sustainable alternative livelihood projects for small fisherfolk including the establishment of innovative credit delivery schemes to support marginal fisherfolk; and (v) sustained assistance to local institutions to strengthen their capabilities in CRM activities.

56. **Weak Implementation of the Fishing Licensing System.** The issuance of fishing licenses by the municipal mayor's office continues to be carried out without regard to resource availability. This is because no indicator for MSY has been established. Currently, fishing licenses are issued by the municipal government based on the needs of the applicant to fish as a means of livelihood, and a nominal fee is charged. Thus, fishing licenses for coastal municipal waters are easy to acquire. The policy to regulate fishing in municipal waters has been largely ineffective. As a first step to introduce control mechanisms in the commercial deep-sea fishing, in 1992 DA attempted to declare a moratorium, to freeze the issuance of new fishing boat licenses. However, this was challenged in court by some commercial fishing groups. DA was subsequently ordered by the court to withdraw the moratorium. The existing fishing licensing system needs to be revised, and its issuance should be based on resource availability. Simple alternative MSY indicator(s) should be developed and linked to a fisheries database management system set in place at both the national and local levels.

57. **Weak Law Enforcement.** In many municipal governments, enforcement of fisheries laws has not been effectively carried out due to inadequate funding to recruit officers, and purchase powerful motorboats, equipment, and communication gear. Illegal fishing by commercial fishing boats in municipal waters continues to be a factor contributing to the depletion of fishery resources in many coastal waters. Most LGUs do not effectively coordinate with the coast guard and the maritime police. Many bantay dagat groups are demoralized because of poor funding and support from municipal governments, as well as the long and complicated judicial process to penalize the apprehended offenders. Although the introduction of program activities has lowered the incidence of rampant illegal fishing in coastal waters (such as dynamite blasting and cyanide poisoning), stricter enforcement of fisheries laws is needed to minimize illegal fishing. Local municipalities should initiate schemes to generate funds from their respective revenue-making programs/projects to finance the purchase of monitoring and surveillance equipment, and the implementation of law enforcement activities on a sustained basis. There is also need to instill greater political will on behalf of mayors to effectively enforce fisheries laws.

58. **Weak Institutional Capability of Local Government.** Since the decentralization policy effected by the Local Government Code of 1992, authority over coastal waters was transferred to municipal governments. The LGU's institutional capability is still generally weak. They have few capable technical personnel, and funding is inadequate to carry out the various activities inherited from the national Government. Few municipal governments were aware of their rights and responsibilities regarding fisheries resource management. While the Program helped some LGUs develop and implement CRM and law enforcement to control illegal fishing, LGUs still require significant strengthening to function effectively.

59. **Need for Sustainable Alternative Livelihood Projects.** As more fisherfolk, their

dependents, and other coastal folks seek livelihood from the sea, more pressure is exerted on the diminishing marine resources. This is particularly severe in the municipal coastal waters. The Program provided assistance to develop sustainable alternative (or land-based) livelihood projects, but without much success. The limited success points to the need to undertake research and pilot projects to identify viable, noncapture fisheries livelihood options in the coastal areas, and to improve the design of future microenterprise development interventions. Such efforts will have to include (i) design of a suitable microcredit scheme, (ii) provision of appropriate technical and extension support to fisherfolk, (iii) provision of safeguards to ensure access to funds, (iv) monitoring and evaluation, and (v) inclusion of social support programs to ensure the successful transition from a fishing-based lifestyle to one that is land-based.

60. **Need to Sustain Coastal Resource Management Activities.** Although the Program has initiated numerous CRM activities in the 12 priority bays, FARMCs in collaboration with LGUs still have difficulty sustaining their CRM activities. Gains made by the Program need to be sustained and reinforced by continuing efforts to educate coastal communities of the benefits of CRM. There is also a need to provide them with technical and logistical support to (i) implement CRM-related projects, (ii) enact and enforce local fisheries ordinances to encourage the adoption of resource enhancement and income diversification measures in their respective areas, and (iii) refine or modify current approaches and implementation arrangements for more effective CRM implementation. The ADB-financed Fisheries Resource Management Project (footnote 17) provided assistance to the 12 priority bays under the Program. There is a need to ensure that the additional funding is effectively utilized to undertake and monitor CRM activities.

VI. CONCLUSIONS

A. Overall Assessment

61. The program loan was provided when the fisheries sector was facing severe constraints in terms of rapid depletion of marine resources, siltation and pollution of coastal areas and seawaters, rampant illegal and destructive fishing activities, and weak institutional and management capabilities. The Program supported the Government in implementing a series of reform measures and strategic adjustments to transform the fisheries sector from exploit production to an approach based on resource management and conservation. The majority of the reform measures agreed upon were adopted. However, the implementation of some reform measures was hampered by technical problems such as court injunctions and adoption of inappropriate MSY indicators. These reform measures include the issuance of fishing licenses based on sustainable yields and the charging of FLA based on economic rents. Over the program period, substantial progress was made in implementing the reforms envisaged, and further progress has been made since program completion, particularly on the enforcement of fisheries laws and regulations in municipal waters; enactment of the Fisheries Code; greater devolution of CRM activities to LGUs and FARMCs; and sustained support for policymakers, planners, LGU officials, and other stakeholders for the management and conservation of coastal resources. During the program period, commercial fishing and aquaculture production registered a significant increase, while problems still exist in the municipal waters in terms of overfishing, weak law enforcement, illegal fishing, and continued depletion of marine resources in some localized areas.

62. Most of the policy measures implemented and investment activities undertaken aimed to change fisheries sector management and to conserve marine resources. This resulted in an attitude change for policymakers and fisherfolk concerning the fisheries sector. The reforms and investment activities raised awareness of the need to conserve the limited marine resources and changed the mindset of fisherfolk and policymakers on the need to properly manage the resources rather than simply exploit them. The Program constitutes the first comprehensive strategy of the Philippine Government to address the most pressing problems of the fisheries sector. Its accomplishments consist not so much the more tangible and easily quantifiable outputs, as the more fundamental process of laying the foundation for sectoral change and responsible resource management. In this respect, ADB has continued its policy dialogue with the Government on advancing the program reform measures.

63. While the program loan was timely and supported the Government to undertake and implement policy reform measures and investment activities, it met with numerous problems in implementing investment activities. The Program was highly complex and consisted of numerous interrelated activities that were impossible to be realized within the five-year time horizon. This was complicated by the need to involve many stakeholders, NGOs, and bureaucratic Government agencies. Most policy reform measures were appropriate, but in many cases (such as FLA rentals) there was lack of political will to implement them. This led to a dismal outcome for some major policy reform measures. The policy measures and investment activities lacked priorities and performance indicators. The implementation arrangements did not provide for coordination and cooperation between the LGUs, national Government agencies, and stakeholders. This severely limited progress and impact monitoring. The credit component was not properly designed, and most funds were given to unintended beneficiaries. The component to develop sustainable alternative livelihood (land-based) projects for fisherfolk was largely a failure because of insufficient planning and social

preparation. It proved not easy to change a fisher to a land-based (such as livestock) farmer.

64. The Program has achieved a mixture of results. Not all policy reform measures were implemented, and the investment activities showed some patchy results (such as artificial reefs, fish sanctuaries, and CRM activities). A satisfactory program impact on the fisheries sector is yet to be achieved. Although the Government is continuing its efforts to achieve the reform targets beyond the program period, progress is slow. Concerted effort is needed to sustain the program activities, if the program goals and targets as envisaged are to be realized. In view of its achievements and weaknesses in implementing the investment activities, the overall program performance is considered to be partly successful.²⁰

B. Lessons Learned

65. The main lesson learned is that when formulating policy reforms, a comprehensive review and analysis of the sector followed by continuing policy dialogue over an extended period²¹ are important. Attention must also be given to the appropriateness and timing of targets for the attainment of policy goals and objectives. Many policy reforms and associated investment activities require time to have a demonstrable impact. The design of projects with a policy reform component should (i) incorporate measures to help attain policy objectives (e.g., information and education campaign); and (ii) allot sufficient time for the social and technical preparation of those who will be affected by, or involved in, policy implementation. Political will must also be strengthened, and an active constituency based on sustainable development and resource management ensured. A longer time frame is needed for a sector development program. ADB needs to pay greater attention to sector issues and sector development programs, and establish a pragmatic time frame for policy reforms to have an impact.

66. Programs that are broad in scope and have complex and dynamic parameters should be designed using a phased development (or process) approach to allow for progressive understanding of changing conditions in the program area. A process approach provides a basis for designing project activities for the succeeding phases, and allows interim evaluation of the project components already initiated. This, in turn, allows necessary changes/modifications for subsequent phases to be identified. Program design should also take into account the country's political structure and legal system; they may impose constraints on the pace of policy reforms and investment activities. A time-bound action plan should be based on realistic assumptions of both the implementation capacity of the executing agencies and other exogenous factors.

67. With the devolution of national Government functions to LGUs in the Philippine context, the planning, design, and implementation of similar programs/projects should involve the LGU with jurisdiction for the proposed activity. LGU involvement during the early stages of program planning and design will encourage and strengthen their support of program activities, and provide a mechanism for determining and delineating responsibilities during program implementation. Such a strategy will also enhance the effectiveness and efficiency of program/project execution. This will result in maximum benefits as a result of better coordination and cooperation of the national agencies and LGUs.

68. Development of sustainable alternative livelihood projects is particularly difficult in coastal and rural areas. There is need to devise an innovative microcredit component to link with these

²⁰ The Agriculture and Social Sectors Department (East) considers the Project to be generally successful.

²¹ The involvement of ADB and the Government in policy dialogue and formulation extended over two years prior to loan approval.

projects to ensure their sustainability. The existing livelihood of the fisherfolk is closely interlinked with their cultural practices. New approaches need to be developed, and adequate time should be provided for social preparation of the target beneficiaries.

69. The availability of capable locally based NGOs or people's organizations at project sites is often overestimated. Future programs/projects requiring NGOs should emphasize the importance of (i) reviewing the existence of capable locally based NGOs prior to finalizing project design; and (ii) selecting potential project sites based on the availability of capable NGOs.

C. Follow-Up Actions

1. For the Government

70. Several follow-up actions need to be carried out by the Government to sustain the activities initiated under the Program. These include (i) stricter control of the issuance of fishing licenses based on simple and practical indicators that could be easily quantified and supported by enforceable penalties that will effectively deter illegal fishing;²² (ii) immediate implementation of the recommended increase in FLA rent in accordance with FAO No. 125, which appropriately reflects economic rent; (iii) continued identification and development of sustainable, and technically and financially viable alternative livelihood projects for municipal fisherfolk; (iv) development of an innovative credit delivery scheme to suit the needs of marginal fisherfolk; (v) identification of strategies to strengthen law enforcement in municipal waters; and (vi) provision of sustained assistance to local institutions to strengthen their capabilities in CRM activities.

2. For ADB

71. ADB provided the follow-up Fisheries Resource Management Project (footnote 17) to continue the Program's investment activities. These will enhance CRM planning and execution, support income diversification, and provide capacity building of LGUs and Government agencies involved in the fisheries sector. ADB needs to closely monitor this Program to obtain a long-term assessment of the achievement of the Program's goals.

²² This could be done under the monitoring, control, and surveillance component of the Fisheries Resource Management Project.

APPENDICES

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