

Annex 9 - Fisheries Sector

I. Introduction

1. The fisheries sector, the traditional production activity in the Maldives and a big drive of the economy along with the other main economic sector, tourism, were seriously affected by the tsunami of 26 December 2004. The sector (fisheries and fish processing), which has experienced strong growth in recent years contributed about 9.3% to the Gross Domestic Product (GDP) in 2004.¹ The sector is primarily rural based and is intimately integrated with rural livelihoods and income. It has evolved from a traditional subsistence-based pole and line tuna fishery to a number of commercial fisheries and small processing units. The fishing industry is the second major source of foreign exchange after tourism. Although about a third of the annual catch is consumed domestically, fish exports currently account for almost half of the country's exports. Fish exports in 2003 amounted to \$75.6 million (equivalent to \$250 per capita). The sector is a major provider of employment in the Maldivian economy, particularly in outlying atolls. With 14,955 fishermen, the sector employs 11% of labor force and about 20% of the total population is dependent on fisheries as the major income earning activity.²

II. Post-tsunami Situation Analysis

2. Within the fisheries sector, the pole and line tuna harvesting subsector and the small-scale fish processing sub sector were the ones most affected by the tsunami. Several fishing communities were displaced from their islands. Over 100 fishing vessels in the medium size range and 20 artisanal fishing vessels are reported lost or seriously damaged. An additional 22 vessels are out of commission due to damage to engine and fishing gear. With an average of 10 crew per vessel, this means a direct loss of income earning opportunity for about 1,200 fishermen. Fishery infrastructure such as fishery island harbors and safe anchorage, and boat sheds have been damaged in several islands. Traditional fish processors, mainly women, in the most affected atolls in the central region lost their productive assets and production stocks. Those most seriously affected will lose the high fishing season (January – April). The economic losses will be severe, specially for the artisan, small-scale fishers and fish processors. Fishery assets lost and/or destroyed are summarized in Annex 1.

III. The Government's Immediate Response

3. Immediately after the tsunami, the Ministry of Fisheries, Agriculture, and Marine Resources (MFAMR) and the Maldives Industrial Fishers Company (MIFCO) agreed to raise the purchase price of pole and line skipjack tuna from Rf3.75 per kg to Rf4.00 per kg to fishers in all fishery zones of the country.³ The financial burden of the increased price to fishers is borne by the state owned enterprise, Maldives Industrial Fishers Company (MIFCO) and three private tuna businesses. Although fish landings in the southern atolls and in the hardest hit central atolls showed a significant immediate recovery following the price increase, fishing effort and fish catch is still substantially below annual averages for the peak season. Further action is needed in order to induce more fishers to resume fishing and to increase their income earned. In addition to raising fish prices, about 32 tons of frozen tuna held in cold storage by MIFCO and other private companies were released as food aid to affected people. Some of the collector vessels too were deployed for transport and relief work. Tuna purchase companies provided fuel as credit to vessels of the affected islands.

¹ Based on Statistical Yearbook of Maldives (2004), this figure includes fish processing. Excluding fish processing of 2.7%, the contribution of the fisheries sector to the GDP in 2003 is 6.6%.

² Ministry of Planning and National Development, January 2005, Statistical Yearbook of Maldives (2004), Male, Maldives.

³ MIFCO is a fully state owned enterprise involved in processing and export of tuna. MIFCO operates a cannery and few cold storage facilities and also owns a fleet of collector vessels.

IV. Methodology of Damage and Needs Assessment

4. The Ministry of Planning and National Development (MPND) has prepared a set of reports containing damage estimate for different sectors including fisheries and marine resources. The mission's first round of discussions was held at national level with MPND, Ministry of Finance (MOF), and the National Disaster Management Center. The mission held discussions with MFAMR staff at Male, and local fishers in the tsunami-affected areas during the field visit. The mission visited Dhiffushi Island in Male atoll on 11 January 2005 in order to gain first-hand information on the extent and nature of damages in the island.

5. Given the limited time available to the Mission, the team relied primarily on the Government data and information for the damage and needs assessment, with the rapid assessments reports, prepared by MPND, being the major source. As a first step, MPND has identified 69 most affected islands.

V. Damage Assessment

6. According to the estimates prepared by the MFAMR, the total cost for repair and rehabilitation of the damages to fisheries industry from the 2004 tsunami would amount to about Rf321 million (\$25.10 million equivalent). These damage assessments and cost estimates cover repair and/or replacement of fishing vessels, engines, fishing gear and accessories, fish processing equipment and infrastructure. A summary of the losses is given in Table 1 and details are given in Annex 2. Each atoll office has assessed the tsunami damage and reported to MFAMR. While there is a need for a more detailed survey to ascertain the assessment and verify the cost estimates, there is agreement about the broad extent of damages to fishing vessels, which need immediate repair. The details of damage and social implications are as follows:

(i) The direct losses in the sector are estimated at Rf168 million (\$13.18 million equivalent). The losses include 120 fully damaged and lost fishing vessels; 27 partially damaged fishing vessels; lost equipment of 337 cottage fish processors and 37 commercial processors; lost equipment in 5 reef fishery harvesting boats, including loss of 16 ocean cages of the export sector; damage to 8 boatsheds; and finally, damage to the Mariculture Research Station and the FAD (Fish Aggregation Device) Centre.

(ii) Indirect losses in the sector is estimated at Rf152 million (\$11.92 million equivalent) as fishers will lose fishing business and a large number of the fishers have been displaced from their home islands, particularly in the central atolls. In addition, a large number of island communities in the atolls base their livelihoods on cottage-based processing of Maldives fish. Therefore, loss of livelihood activities and productive assets will have serious negative impacts on the affected fishery communities. Assistance to rehabilitate their livelihood or to establish income-generating activities will be necessary.

7. **Other Observed Impacts:** The 2004 tsunami had other adverse social impacts on the fishing communities. As they rarely use banking facilities to deposit savings and keep their savings in their house, they lost their savings when the tsunami hit their houses. Lost lifetime savings of fishers will have a long-term impact on the tsunami-affected populations. Access to financial assistance through small-scale credit or income-generating activities will be needed to support livelihood recovery. Fishing communities will also face difficulties in loan repayment as a major portion of damaged fishing vessels were built with loans from financial institutions. Without fishing vessels, they cannot catch fish during the peak fishing season from January to April, and the small-scale cottage processors cannot produce Maldivian fish up to April. They will therefore face difficulties in loan repayment during the lean fishing season.

Table 1: Damage Assessment for Fisheries Sector

No.	Type of Facility	Unit	Damage to Infrastructure ¹		Total Damage to Infrastructure	
			Full	Part	Rf Million	\$ Million ²
1	Fishing vessels	No.	120	50	147.50	11.52
2	Fish processors ³	No.	374	0	17.80	1.39
3	Reef fishery ⁴	No.	0	5	1.88	0.15
4	Infrastructure ⁵	No.	8	2	1.55	0.12
5	Business loss ⁶				152.57	11.92
Total					321.32	25.10

¹ Damage estimate is based on MFAMR's revised estimate, received on 2 February 2005.

² \$1.0 = Rf12.80

³ 337 Cottage fish processors and 37 commercial processors lost equipment and materials.

⁴ Reef fishery damages include lost equipment and materials of the harvesting fleet and lost ocean cages.

⁵ Infrastructure includes fully damaged 8 boatsheds, Mariculture Research Station, and FAD centre

⁶ Direct income losses from fishing and other businesses estimated here. MFAMR estimate of Rf405.04 million as business losses also include financial costs for vessels and loss in GDP.

8. The estimated fleet incapacity during the peak fishing season may lead to a drop in the total annual fish catch, resulting in a worst case scenario of 8.6% reduction in the fisheries sector GDP compared to 2003. Maldivian fishers experienced reduced profits and savings during 2004, as a result of the increased fuel prices in 2004, increasing operational costs, and the accompanying fall in world market prices for tuna. Thus, even for the unaffected segment of the fishery, recovery from 2004 losses may be slow due to sustained low world market prices and diminished buying capacity of the major tuna purchasing companies in the country.

VI. Needs Assessment

9. **Rehabilitation Strategy:** MFAMR plans to complete the rehabilitation works in two phases of short-term and mid-term in order to restore the livelihoods of fishers as soon as possible. The needs assessment shows the total estimate of Rf180.34 million (\$14.09 million equivalent). The estimate for each phase is in Table 2 and the rehabilitation strategies are as follows:

- (i) Phase I: Short-term: Based on the MFAMR estimates for damages, the immediate repair works in the fisheries industry are now estimated to cost Rf74.79 million (\$5.84 million equivalent). The repair works include building 10 new medium range vessels, repairs to partially damaged fishing vessels, replacement of lost/damaged fishing gear and engines, replace of equipment in reef fishery, replacement of damaged equipment and facilities for Maldivian fish production. The short-term need also include microcredit arrangement for the tsunami affected cottage processors for their operational capital. Some initiatives have already been taken to build new vessels and replace equipment at a cost of Rf15.50 million (\$1.21 million equivalent) through Government financing. Phase I also includes an assessment of impact on reefs and marine resources. The community development approach will be applied to microcredit operations through informal fisher groups.
- (ii) Phase II: Mid-term: According to MFAMR, mid-term rehabilitation works are estimated to cost Rf105.55 million (\$8.25 million equivalent). These works include replacing damaged fishing vessels and fishing gears.

Table 2: Needs Assessment for Fisheries Sector

No.	Activities	Phase I Short-term	Phase II Mid-term	Total Amount	
		Rf Million	Rf Million	Rf Million	\$ Million
1	Replace damages fishing vessels (inclusive of engine, gear, etc.)	28.35	72.09	100.44	7.85
2	Replace fishing gear/engines etc. in partially damaged boats	24.43	8.41	32.84	2.57
3	Replace damaged equipment and facilities for Maldivian fish production	9.45	7.05	16.50	1.29
4	Replace damaged /destroyed boat sheds	0.67	-	0.67	0.05
5	Repair mariculture station and FAD Centre	0.89	-	0.89	0.07
6	Assess and monitor impact on reefs and marine resources	3.00	6.00	9.00	0.70
7	Micro credit arrangements	8.00	12.00	20.00	1.56
	Total	74.79 (\$5.84 M)	105.55 (\$8.25 M)	180.34	14.09

10. **Long-term Strategy (Beyond 3 years):** As a part of preparation activities for the Government's 7th Development Plan, the Government undertook the World Bank-assisted fisheries sector review in 2001. The MFAMR expects to prepare a fisheries master plan by 31 December 2005, which is one of ten recommendations of the sector review. In the preparation of the proposed master plan, the rehabilitation of the tsunami-affected fisheries activities could also be further pursued.

11. **Assessment and Mitigation of Risks:** There will be a risk of provision and operations of microcredit in implementing the rehabilitation works. As the tsunami-affected cottage processors are most at risk, they need urgently microcredit to operate facilities or the urgent income-generating activities through other labor-intensive civil works. Therefore, the Government should provide microcredit based on the previous microcredit operations.

VII. Possible Recovery Plan

12. **The Government:** Besides the Government started to build 10 new vessels, the Government would like to respond immediately to the needs by using the Ministry's revolving fund of Rf9.50 million to the affected atolls. In addition, MFAMR requested the Government to allocate additional financial sources of Rf24.39 million to meet the needs in the fishery sector. In addition, the Government would like to get assistance from the development partners, including multilateral and bilateral donors, United Nations agencies, and international NGOs in order to assist the tsunami-affected fishers. Based the joint donors' assessment on the tsunami damage and needs, the Government will seek any assistance from the potential development partners through the Donor Conference, which is tentatively scheduled in March 2005.

13. **Development Partners:** To respond the immediate needs to rehabilitate the tsunami damage, ADB plans to allocate \$2.6 million grant in its emergency assistance package expected to be approved by March 2005. The United Nations Food and Agriculture Organization and the UNDP showed keen interest to participate in the recovery program.

