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## COMMITTEE ON FISHERIES

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## REHABILITATION AND RECONSTRUCTION OF LIVELIHOODS IN THE FISHERIES AND AQUACULTURE SECTOR IN COUNTRIES AFFECTED BY THE TSUNAMI IN 2004

### SUMMARY

This paper reports on the FAO response to the tsunami disaster and discusses how ongoing reconstruction efforts can provide an opportunity to revisit and review fisheries policy frameworks. The paper discusses selected issues being of importance to FAO's ongoing fisheries and aquaculture rehabilitation and reconstruction and presents positive and negative impacts as well as lessons learnt from past and ongoing initiatives. Guidance regarding further work and potential donors is also sought.

## INTRODUCTION

1. The tsunami of 26 December 2004 was a natural disaster which struck coastal fishing communities, many of which were already in a precarious situation generally characterised by overcapacity and depleted fish and aquatic resources in the affected countries. In some places, the tsunami exacerbated the situation of vulnerable people experiencing civil conflict, droughts and floods.

2. The tsunamis caused human tragedy and severe damage to infrastructure in 14 countries around the Indian Ocean. Fishing and coastal communities were particularly exposed and suffered massive losses of people, productive assets and shattered livelihoods. Total damage to the fishing industry (including aquaculture) were estimated at US\$ 510 million in Indonesia, US\$ 335 million in Sri Lanka, about US\$ 140 million in Thailand and about US\$ 25 million in Myanmar. Estimates<sup>1</sup> put the human cost of the tsunami at just under 300 000 people killed (or still missing) while devastating the livelihoods of around five million people.

3. During the 26th Session of the Committee on Fisheries, members highlighted “the need for FAO to play a key role in collaboration with other organizations in assisting the governments of affected countries, including through the coordination of fisheries rehabilitation activities and the provision of technical assistance.” FAO was particularly requested to assist in the development of national strategies to ensure long-term sustainability based on the Code of Conduct for Responsible Fisheries; members also recognized the need for extrabudgetary funding for a coordination and technical assistance unit to be based at FAO headquarters and in the Regional Office for Asia and the Pacific (RAP).

## FAO RESPONSE

4. In the first week after the disaster FAO, like other specialized agencies of the United Nations responded swiftly to provide relief and rehabilitation assistance in the area of agriculture, fisheries and forestry. In addition to an immediate approval of three Technical Cooperation Programmes for a total of US\$ 1.5 million and the dispatching of FAO staff to the affected areas, it launched, in coordination with other UN agencies and through the Office for Coordination of Humanitarian Affairs (OCHA), a flash appeal for US\$ 29 million to fund its assistance in agriculture, forestry, fisheries and aquaculture. The resources were necessary to enable the provision of technical assistance and coordination, and in the case of fisheries, to assist in supplying fishing gear, repairing and replacing fishing boats and engines, rebuilding or repairing landing sites, fish storage and processing facilities, fish markets and rehabilitation of aquaculture ponds. A flash appeal review was launched 3 months later once a better estimate of the damage was available.

5. Through the Consortium to Restore Shattered Livelihood Communities in Tsunami-devastated Nations (CONSRN)<sup>2</sup>, FAO has been instrumental in the development of a regional strategy for the rehabilitation and reconstruction of the fisheries and aquaculture sector in Asia and contributed to the formulation and dissemination of experiences and lessons learnt from the

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<sup>1</sup> FAO: Response to the earthquake and tsunami disaster. 15 March 2005.

<sup>2</sup> Members of the Consortium are: Asia Pacific Commission (APFIC); Bay of Bengal Programme – Intergovernmental Organization (BOB-IGO); FAO Regional Office for Asia and Pacific (FAO-RAP); Network of Aquaculture Centers in Asia and Pacific (NACA); South East Asia Fisheries Development Centers (SEAFDEC); and WorldFish Center (WorldFish).

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tsunami rehabilitation. The following six strategic objectives form the basis for CONSRN partner activities in the region<sup>3</sup>:

- to develop a responsive and well regulated policy and institutional environment for fisheries and aquaculture at national and local level, which involves communities and recognises the importance of local level needs in planning, monitoring and regulation.
- to ensure that appropriate physical assets are provided to the tsunami victims in a timely, equitable way to replace what they have lost whilst ensuring sustainable use of natural resources in the future.
- to restore the natural environment whilst ensuring coastal communities impacted by the tsunami continue to have equitable access to inputs and the sustainably managed natural resources on which their livelihoods are based.
- to ensure that appropriate financial mechanisms are in place for those affected by the tsunami.
- to ensure through the adoption of a participatory approach and capacity building, that the coastal systems of tsunami affected countries are managed in a sustainable way to the benefit of all in the communities.
- to ensure the development of communities and community organisations which are empowered to participate effectively in post-tsunami planning and rehabilitation activities.

6. FAO has developed a four-level timeframe response to the Tsunami crisis, as outlined below in order to address the continuum of relief to development work:

- *Immediate* (first 6 months) with emphasis on damage assessments and emergency work in the context of the original UN tsunami Flash Appeal
- *Short-term* (12 months) with emphasis on rehabilitation assistance in the context of the Mid-Term Review of the UN Tsunami Flash Appeal
- *Medium-term* (12-24 months), through the preparation of strategic frameworks (or sectoral master plans) and specific FAO action plans for rehabilitation
- *Long-term* (over 24 months and up to 5 years) through reconstruction programmes and projects that include elements of longer-term planning.

7. In January 2006 the FAO Fisheries Department (FI) established, with support from the Swedish Government, the Coordinating and Technical Support Unit to Tsunami Rehabilitation in Fisheries and Aquaculture (CTSU). Staffed with experts based at FAO headquarters in Rome, Italy, and at the FAO Regional Office for Asia and the Pacific, Bangkok, Thailand, the CTSU assists in the preparation of national strategies, in the preparation and implementation of medium to long-term rehabilitation and reconstruction programmes and activities in tsunami affected countries, and through enhanced regional collaboration and coordination.

8. Under the supervision of the FAO Fisheries Tsunami Task Force, CTSU and technical officers assist governments in the affected countries to “build back better” and to rehabilitate and improve the livelihoods of fishing communities. FI supports putting national strategies into effect by assisting with project identification, formulation, financing, implementation and evaluation.

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<sup>3</sup> See “Regional Strategic Framework: Rehabilitation of Fisheries and Aquaculture in Tsunami Affected Countries in Asia” at [http://www.apfic.org/apfic\\_downloads/tsunami/2005-09.pdf](http://www.apfic.org/apfic_downloads/tsunami/2005-09.pdf).

9. Current activities include a strategic alliance with World Bank to assist the governments of India and the Maldives in developing fisheries sector master plans and management frameworks. In Sri Lanka and Indonesia, FI has assisted the governments in developing longer term fisheries development project proposals. These are currently being discussed with potential donors for further development into full projects for longer term funding.

#### **ONGOING FAO FISHERIES REHABILITATION ACTIVITIES**

10. Donor funding to the FAO tsunami emergency response was rapid amounting to some US\$ 68 million collected as of August 2006, of which around 60 to 70 percent were earmarked for 45 projects for fisheries rehabilitation and reconstruction<sup>4</sup>. Through support to the FAO Emergency and Rehabilitation Division, the Fisheries Department contributes technical assistance to ongoing assistance programmes in fisheries in Indonesia, Maldives, Myanmar, Seychelles, Somalia Thailand and Yemen. Typically these programmes started with participation in assessments and led to channeling of donor funding for repair and replacement of boats and for the purchase of fishing gear. Less emphasis has so far been placed on assistance to the trade sector, except through immediate inputs to rebuilding shattered livelihoods.

11. In Indonesia, at the start of the FAO assessment phase, there was an evident conflict between the need to show rapid results and providing inputs and careful planning and coordination. FAO now has a substantial fisheries assistance programme in the Province of Aceh and Nias Island, funded by a number of donors. This ranges from training boatbuilders to build better and safer boats to provision of fishing gear and assistance to the provincial fisheries department to register and control the quality of new fishing boats. In the post-harvest sector, almost 200 small scale fish drying operations producing for regional trade, have been rehabilitated, 25 mobile fish transporters have been put back into business and temporary auction markets have been established. Donors are being sought for a wide range of projects that have been prepared for extending the reconstruction of processing and marketing to other centers and for the construction of fish landing centres.

12. In Sri Lanka, after the assessments, efforts have concentrated on the repair and replacement of fishing vessels and the provision of replacement fishing gear in order to get the fishermen back to sea. As for other countries, urgent assistance is needed for the post-harvest sector and strengthening of institutional capacities and management frameworks. Project ideas have been generated, e.g. for reconstruction of wholesale and retail markets, refrigerated and insulated storage and transport as well as the introduction of new technologies, particularly refrigerated seawater storage, to extend fishing to offshore resources. The project ideas are currently presented to potential donors.

13. After damage assessment in the Maldives, FAO projects are operational for vessel repair, the establishment of boatbuilding facilities, design and construction of fiber glass fishing vessels (both small and large), replacement of fishing gear and strengthening local community organizations. Additional project proposals have been prepared for the consideration of donors.

14. In Myanmar, a boatbuilding programme for a newly designed fishing vessel has been initiated and fishing gear distributed. There are requests for assistance with small scale fish drying facilities in outlying villages and for help with strengthening the market chain, which are as yet unfunded.

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<sup>4</sup> Donors included Japan, Norway, Germany, U.K, Italy, Canada, Belgium, Spain, China, Palau, Algeria and Zambia.

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15. Damage in the Seychelles was limited, although significant. FAO assistance to fisheries, valued at US\$ 1.5 million, has been completed with the replacement of fishing gear and repair of vessels. Bilateral donors have undertaken the repair of damaged infrastructure.

16. In Somalia there are four ongoing FAO projects for replacement of boats and fishing gear as well as funding for an ice plant and cold store. Several more projects are in the pipeline, especially for post-harvest activities.

17. After an early assessment in Thailand, FAO Technical Cooperation Programme (TCP) funds were mobilized to recover from the damage to fisheries estimated at US \$47 million. Subsequently, additional funds from Japan became available. Four further projects for medium term assistance have now been approved, which increases the total to about US\$2 million. The thrust of the emergency phase activities was the restoration of livelihoods through the provision or rehabilitation of productive assets (boats, engines and fishing gear). The medium-to-long-term phase concentrates on assistance to fishing and farming communities to empower self-help for rehabilitation of tsunami affected fishermen and farmers under the “Building Back Better” concept.

18. An assessment carried out in Yemen in July 2005 by FAO and the Government, revealed more damage than originally thought with 2000 fishing families affected by loss of boats, gear and infrastructure to the value of US\$2.2 million. A project has been prepared and donors are being sought.

## **MAJOR ISSUES**

### **Livelihoods**

19. Sustainability of the resource and the extent to which livelihoods of dependent communities can be maintained and improved requires diversification of coastal economies into other productive sectors. Implementation of the emergency projects showed that diversification into small scale preservation/processing and marketing activities can provide additional livelihoods opportunities, including for women, especially those who lost husband fishermen during tsunami. Aquaculture is another alternative productive area with livelihood opportunities for coastal communities. Beyond fisheries and aquaculture, agriculture and tourism should be explored to create income earning opportunities for fisheries communities. What is important is to re-enforce economic linkages in the coastal area and protect the integrity of coastal and nearshore ecosystems. Integrated coastal area management (ICAM) can help in this process and avoid or mitigate resource use conflicts. However, at this stage, people and communities, though now gaining productive capacity, have little social or institutional capital to draw upon to help regulate fishing effort or retain or add value to their efforts. Any assistance provided to the affected countries and their governments should therefore encompass co-management arrangements between different levels of government and the resources users to design the particular roles and responsibilities of all stakeholders involved.

### **Fisheries management**

20. Good governance and political will underpinned by far-reaching reform, investment outside the sector to provide alternative employment and sustainable coastal fisheries practices are a pre-requisite for long-term economic well-being of fishing communities. This need has been recognized by governments and is well articulated in the Ministerial Declaration on Fisheries and the Tsunami (FAO, 2005), which states that the fishing capacity that is being rebuilt should be commensurate with the productive capacity of the fisheries resources and their sustainable utilization. The issues of limiting fishing capacity and avoiding subsidy in the fisheries sector are key themes in FAO’s normative role and the Organisation is therefore required to act consistently and according to the principles it seeks to promote. Two years after the tsunami, it can be safely

predicted that fishing capacities of fishing vessels will unfortunately in many places exceed pre-tsunami levels. If this greater fishing capacity is used in an unrestricted and uncontrolled manner, it will add further pressure on fish stocks, many of which are already in an alarming state. The consequences for many fishers and their families would also be dire in the medium and long-term, even though in the short term they may cherish having received a new boat, engine and fishing gear.

### **Status of fishery resources**

21. In the absence of standardized data collection and output control for most of the affected tsunami countries reliable data on fish stocks are lacking. However, pre-tsunami statistics in neighbouring areas indicate most fish stocks were fully or over-exploited, and this reflects the likely status of many of the affected countries post-tsunami. The question of whether or not there is a correlation between the oversupply of fishing craft and overfishing can not be answered clearly. Additional assessments, in particular of the fisheries resources, are needed. Intuitively however, there would appear to be grave cause for concern. Through a regional project, FAO is currently assisting the governments in carrying out assessments of the status of the fisheries with the participation of tsunami-affected communities. These assessments will greatly facilitate the longer term planning for rehabilitation efforts in the sector and will link with vessel registration schemes.

### **Safety at sea**

22. In the immediate aftermath of the tsunami, the world responded with exceptional generosity to appeals for assistance to the victims. Much of the funds flowed, most rapidly and perhaps disproportionately, through national and international non-governmental organizations (NGO's and INGO's). The avalanche of well-intentioned, but not always well targeted, assistance from NGO's to replace fishing boats and gear has in some cases resulted in an increase of fishing capacity with too many small, often poorly built and unsafe, boats entering the fishery. The promotion and implementation of safety standards for fishing vessels, particularly for small fishing vessels, has been at the core of FAO assistance during the emergency and reconstruction phases following the tsunami. It will continue to be a key component of longer-term projects that are being implemented or planned. It is ironic for many fishers that, after having survived the tsunami, they will be forced to go out to sea in fishing boats that put their lives at risk. Safety is an integral part of fisheries management and the reduction of loss of life at sea is an important indicator of effective fisheries management.

## **MAIN FINDINGS AND LESSONS LEARNED**

23. FAO's role after a natural disaster is to restore local food production and reduce dependency on food aid and subsequently to provide long-term assistance for rehabilitation of afflicted areas. In the case of tsunami, fishing communities needed the restoration of fishing gears, boat and engine repair and replacement and rehabilitation of aquaculture ponds. However, the strong emphasis of FAO support on physical assets in all countries, although it provided a visible signal of FAO's presence and commitment, it came at the expense of technical assistance activities and highlighted the need to improve FAO operations and procurement procedures to be rapidly responsive.

24. Providing inputs to the fisheries sector differs from the agriculture since production is dependent on a natural resource. While distributing fishing gear may be an excellent strategy for improving food security in certain situations and areas, care has to be applied if fishery resources are limited or the carrying capacity of the resource base is not known. If fishing effort increases beyond what the resource can sustain, the fishery-based livelihoods created may prove not to be sustainable in the longer-term. Experience shows that there is a clear link between emergencies and longer-term development that has to be considered in early disaster response. The potential

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over-supply of small fishing boats in some of the Asian countries as part of the assistance after the tsunami confirms the necessity of long-term planning early on in order to ensure that the assistance given is sustainable.

25. It should be highlighted, especially for the attention of donors, that governments, fishermen communities, NGOs and other organizations expect FAO to provide early assistance in technical and policy advice and reconstruction strategy. However, emergency projects should make resource provisions for such assistance. An over-emphasis on input delivery clearly compromises the time technical staff could devote to coordination, technical assistance, quality control and monitoring, whereas advice provided in the form of fisheries and aquaculture reconstruction strategies and programmes was much appreciated by the tsunami affected governments. In Indonesia and Sri Lanka, both the agriculture and fisheries strategies formed the basis for the Government's reconstruction strategies.

26. A fundamental principle that needs to be applied in assessments and in relief and the subsequent rehabilitation and recovery work, as well as in addressing prevention and preparedness, is the participation of local communities and institutions, i.e. those directly concerned by the disaster. The coping capacity of those suffering from the consequences of a disaster is often impressive. The affected households are the ones knowing what they need most, and fishers generally know what type of boat and gear they should use. The needs assessments are not a one-off activity but an exercise that continues on a regular basis through all the phases of the emergency response and reconstruction phase.

27. The tsunami, the emergency responses of the international community and the ongoing reconstruction and rehabilitation efforts show the following impacts:

- the catching power of the new boats and fishing gear is likely to be higher than those they replaced thus generally increasing the pressure on already depleted fishery resources;
- an increase in the countries' fishing capacity can be expected due to new entrants into the open-access fisheries;
- Because of limited or inadequate technical supervision by non skilled labour (recalling that many skilled boat builders were among those lost), many replacement boats were not built to acceptable safety standards for the design and construction of small fishing vessels, thus contributing to the vulnerability of fishers.

28. Positive secondary impacts are the result of assistance to governments in the revision and improvement of their fisheries co-management frameworks and the establishment of more effective fisheries policy and fisheries management systems to tackle pre-tsunami problems and build back better. Simply restoring the old system has been recognized as being neither a sufficient nor an appropriate course of action. This should lead to the generation of a sustainable flow of benefits for fishing communities in the future, thus recognizing the fact that fisheries, like other renewable natural resources, have huge potential to contribute to sustainable wealth and pro-poor economic growth.

29. As a consequence, many Governments of the affected countries are using the tsunami rehabilitation as an opportunity to prepare longer-term fisheries development strategies and programmes, such as:

- the establishment of legal or social frameworks for fisheries that establish rules controlling access to fisheries, data reporting requirements, and processes for planning and implementing more comprehensive fisheries management;

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- recognizing the need to establish fisher interest groups and to delegate powers to community-based organizations to ensure the enforcement of Government laws on fisheries management; this way traditional local organisations and community based organizations continue to playing and important role in implementation of tsunami rehabilitation and reconstruction projects
  - ensuring that new boats and fishing gear allow for safe, healthy and fair working conditions and meet agreed minimum standards;
  - reviewing the institutional set-up of fisheries management authorities, the responsibilities and capacities of their agencies with regards to fisheries management and making recommendations for improvements (including capacity building and reforming); and
  - building disaster management capacity.

30. Further collaboration with International NGOs can lead to effective synergies that build on FAO's fisheries policy and technical strengths and on NGOs advantages in contracting, procurement, significant resources and cash flow, reporting and management capacity. The FAO /ARC (The American Red Cross) partnership, currently in the final stages of approval, may provide a good plate-form for cooperation in the transition from emergency to long-term reconstruction of fisheries and aquaculture. This project comprises the following four main components: support and strengthening of Government coordination and planning capacity, development and implementation of improved management practices for coastal fisheries, rehabilitation and development of sustainable aquaculture, improvement of product quality and efficiency in the fish post harvest and marketing sector.

#### **FUTURE ACTIVITIES**

31. Two years after the tsunami, the acute emergency is over, the planning for reconstruction has been done but it now needs to be turned from strategic frameworks into reality by a combination of international funding, technical assistance and national willpower. The UN system and FAO are committed to this all-important next phase under the slogan "Building back better", which recognizes that in many cases the infrastructure and the technologies employed in fisheries prior to the tsunami were inadequate and in need of development. Of particular concern is the issue of sustainability given the fragility of coastal ecosystems in the countries concerned.

32. It is foreseen that the reconstruction of fisheries and aquaculture will require another 3 to 5 years, depending on the country and extent of damage. FAO has been given a primary role and responsibility by its Members to assist in the development of national and regional rehabilitation and reconstruction strategies for fisheries and aquaculture, and to help in the coordination of the delivery of appropriate activities through donors and interested parties to regain sustainable livelihoods and the economic viability for participants. FAO has also been designated the coordinator of emergency and rehabilitation efforts in fisheries by the national authorities in Sri Lanka and Indonesia. There is still significant demand from governments and other stakeholders for a prolonged involvement of FAO Fisheries Department, either to meet deferred reconstruction needs or in normative development activities.

33. The main challenges are to assist affected countries in setting policies and objectives for fisheries and stocks to be managed, taking into account the marine ecosystems as well as the changed nature of fisheries (modernized small-scale fishing fleets and over capacities); assist governments in determining and implementing actions that are necessary to enable management authorities together with the fishers and their interest groups to work towards co-management objectives; strengthen the role and function of fisheries management institutions; evolve alternative livelihoods for fishing communities who wish to do so; and to make fishing safer.

**SUGGESTED ACTION BY THE COMMITTEE**

34. The Committee is invited to comment on the information provided and to contribute additional experience. It is requested to provide guidance for future work of FAO, in particular the Fisheries Department, in the area of tsunami rehabilitation and reconstruction in fisheries and aquaculture. The Committee may also wish to provide guidance to donors with respect to funding of project proposals for long-term rehabilitation and development.