

**Incorporating Coastal Livelihoods, Sustainable Fisheries in Poverty Reduction Strategies:
A proposal for the Poverty and Environment Fund**

A. BASIC DATA

1. Activity Title:	1. Incorporating Coastal Livelihoods, Sustainable Fisheries in the Poverty Reduction Strategies in the Sulu Sulawesi Seas
2. ADB Project Officer:	Axel Hebel, Southeast Asia Department
3. Requested Date:	February 2006
4. Implementing organization:	World Wildlife Fund in collaboration with the Regional and Sustainable Development Department (RSDD)
5. Types of Intervention:	Pilot interventions/stakeholder consultations and case studies
6. Amount of Request:	\$50,000 US <i>Note: Total budget of this proposal \$100,000 of which 50,000 is matching funds provided by WWF-US</i>
7. Period of Project:	12 Months
8. Country/Province:	Sub-Regional. Sulu Sulawesi seas (Indonesia, Philippines and Malaysia) with emphasis in the Philippines

B. DESCRIPTION OF IMPLEMENTING ORGANIZATION

The World Wildlife Fund (WWF) is a leading global environmental organization with projects and programs in over 90 countries in the World. It is also recognized as a pioneering conservation and sustainable development organization in the Asia-Pacific region where it works closely with governments and NGOs and maintains a network of offices, projects and programs in virtually all of the Asian Development Bank's (ADB) Developing Member Countries (DMC).

WWF seeks to balance nature conservation and human needs through an active program on sustainable development initiatives that provide collaborative solutions to the world's most pressing environmental challenges. Specifically, its Macroeconomics Program (MPO) has worked extensively in analyzing poverty environment linkages and in implementing innovative programs for poverty alleviation in the context of conservation and improved management of natural resources. The MPO's *Economic Change, Poverty and Environment Project* over 4 years has produced a multi-level approach to local poverty and environment dynamics that includes the overlapping forces at local, sub-national, national and international levels. In the fisheries sector, WWF programs are aimed at reducing the perverse socioeconomic and environmental consequences of the overcapacity of the global fishing fleet and the over fishing in the world's oceans and cycles of poverty it creates. The Marine Conservation Program of WWF has an extensive work program in the development of innovative policies and practices aimed at improving fisheries governance and creating models for sustainable fisheries management. One such initiative is the Strategic Partnership with the World Bank and United Nations Food and Agriculture Organization (FAO) for Sustainable Fisheries in Sub Saharan Africa. This partnership is tackling head on the poverty-environment linkages associated with the overexploitation of coastal fisheries resources through the creation of a \$260 million US Investment Fund and Learning Network for Sustainable Fisheries. The Global Environment Facility (GEF) recently approved a planning grant for the Partnership to implement a region-wide stakeholder consultative process. Full Project approval from the GEF governing council is expected in the fall of 2005 with implementation of the Fund and Learning Network to begin in 2006.

A key element of this PEP proposal is to investigate the relationship between coastal community livelihoods, sustainable fisheries and poverty alleviation in the practices and programs of the ADB and other development agencies in collaboration with ADB and to make recommendations for incorporating sustainable fisheries and coastal livelihoods in the context of national development strategies, CSPs and PRSPs. The subproject is intended to assist

the ADB in its ongoing activities related to providing sustainable benefits to coastal communities in particular those communities that rely on fisheries for livelihoods.

ADB has a standing Memorandum of Understanding (MoU) with the WWF to build a strategic alliance and to develop a partnership to contribute toward the sustainable management of natural resources on which all human welfare depends. This proposal is consistent to the MoU¹.

In addition, the PEP proposal anticipates linking its activities with the ongoing internal review of its fisheries policy by ADB. It is possible the PEP project could serve as a model projects as ADB moves to a revised approach to fisheries coastal community livelihoods.

C. PROPOSED SUBPROJECT

1. Background and Rationale

Through the Asia Pacific region and especially the Sulu Sulawesi Seas sub-region, coastal communities are faced with a myriad of challenges to improve their livelihoods. Key strategic actions include averting the persistent yoke of poverty and maintaining the natural resources that provide both income and sustenance for families. The commercial, artisanal and subsistence catching and harvesting of wild fish populations play a pivotal role in many, if not all, of the coastal communities. Yet, as is true in many other parts of the world's oceans, the fisheries resources of the Asia Pacific region are under increasing threat from both local and foreign fishing fleets. In recent years, as fish populations have declined in other parts of the world, pressures have increased in the Asia-Pacific region and will continue to do so in the future. As such, the Asia Pacific region is particularly vulnerable to the threat of over fishing and mismanagement of fisheries resources. In many parts of the region, fishing communities rank among the poorest populations. A significant increase in the population dependent on fishing and coastal resources has been driven by population growth, development patterns and economic crises. The resulting decline in income and fisheries production per fisher reinforces cycles of poverty. Nowhere is this linkage more apparent than in the Sulu Sulawesi Seas region.

Conflicting policies on fisheries management, coastal development and inadequately regulated access to fisheries resources and insufficient institutional development affect the ability of coastal communities and national governments to effectively manage fisheries and coastal resources in a sustainable manner. As governments balance the competing needs and interests, the health of the fisheries resources and the vulnerability of the people that depend upon those resources are not adequately addressed. The critical linkages between sustainable fisheries management, coastal livelihoods and poverty are rarely fully understood or articulated in national development strategies or in the context of international aid for fisheries management, poverty alleviation and sustainable development.

The Sulu Sulawesi Seas sub-region will be the focus of WWF's initiative with the ADB in particular because of the importance of fisheries to the national economies of the Philippines, Indonesia and Malaysia. More than 30 million people living in the Philippines, Indonesia and Malaysia depend on fisheries production for their livelihoods and many more benefit from the commerce related to those resources. Nowhere in the world can you find a richer variety of marine biodiversity than in the Sulu Sulawesi Seas. Surrounded largely by the Philippines, Indonesia and Malaysia, the seas contain about 450 species of coral. The Tubbataha Reef covers more than 81,000 acres and is the heart of coral diversity in the region. The seas support one of the world's largest varieties of reef fish as well as commercial and community fisheries. The coral reefs and sea turtle nesting beaches make the area a magnet for tourists. In recent years overfishing and destructive fishing practices that use cyanide and dynamite have destroyed large sections of coral and depleted fish populations. The coastal people of the Sulu and Sulawesi Seas have long depended on the marine resources for survival. Indigenous maritime cultures of the Philippines, Indonesia and Malaysia have lived in balance with a wealth of fish, birds and marine mammals for generations

Today, the marine wildlife and coastal communities of the Sulu Sulawesi Seas face extraordinary pressures. Yet the very activities associated with such demand are quickly destroying the resources. The most critical threats to coastal community livelihoods and the marine biological diversity upon which they rely are destructive fishing, overfishing, coastal development, industrialization, and pollution. Ensuring the sustainability of the livelihoods of the poorest populations in fishing communities is essential for reducing poverty. Measures to improve livelihood by a betterment of economic opportunities also requires a more equitable distribution of the benefits derived from fisheries resources at the community levels. At the same time, national benefits can be derived from the development of sustainable and environmentally friendly fisheries industries and appropriate coastal development patterns.

¹ Memorandum of Understanding on working arrangements between ADB and WWF of 26 September 2001.

2. Objectives

The objective of this project is to find ways to mainstream marine conservation and sustainable fisheries in national development strategies. The particular focus will be on poverty and environment linkages i.e. ways in which marine fisheries strategies could contribute to poverty alleviation and also conservation. As such, it aims to help meet the targets of the Millennium Development Goals, particularly those that relate to poverty reduction and sustainable development, and contribute to the ADB's underpinning mission on poverty reduction.

The project will take account of best practices where they exist in sustainable fisheries, building on the experience of past work including ADB projects. In assessing these practices care will be given to determine whether linkages between fisheries and poverty have been clearly identified. Because women in fishing communities oftentimes play a central role in the land-side activities and female-headed households suffer disproportionately from poverty, this project will seek to address the particular issues related to women. Lastly, the project will seek to focus on sites already engaged in ADB-related activities including COREMAP in Indonesia and the recently approved GEF co-financed coastal management project in the Philippines.

WWF's experience in evaluating the linkages between poverty and the environment in the context of its macroeconomic program and with the Strategic Partnership for Sustainable Fisheries between the World Bank, the WWF and UN FAO will provide important insights recognizing important regional differences between the coastal regions of Africa and Asia-Pacific in particular, within the Sulu Sulawesi Seas region of the Philippines.

Through a series of investigative analyses and dialogues among local stakeholders, national governments and international donors, WWF, working in partnership with the ADB, will work to improve the understanding of poverty-environment linkages in the sub-region's fisheries sector. In cooperation with ADB, WWF will select 2-3 coastal communities in which its methodology will be applied to evaluate the poverty/environment linkages, the impacts (positive and negative) to both the people of those communities and the marine and coastal resources upon which they rely. The field research will be conducted in specific geographic areas chosen to highlight the interplay of human and environmental vulnerability in the policy and institutional context of the Sulu-Sulawesi region. The methodology used will be the 'Methodology for Socioeconomic Review of the Fisheries Sector' (Stedman-Edwards, 2006, Appendix A).

The intention of the subproject is to (1) Identify the main threats to sustainable fisheries in the region and (2) Identify opportunities to address these threats within the context of national and local development plans. The results of the research will provide sustainable benefits to the communities through recommendations for more effective management of their resources, and will also give information to the ADB and other donors for ways to provide economic incentives to these communities for sustainable management.

The subproject intends to conduct stakeholder engagement meetings with the communities and a series of surveys and interviews. This will give an opportunity for understanding the problems from the perspective of local stakeholders and soliciting ideas for what policy options might be attractive to them. Care will be taken to ensure that the opinion and experiences of women are actively sought out. Please see the attached methodology (Appendix A) for a more detailed description of the participatory approach.

The purpose of the proposed subproject is intended to provide alternative and innovative approaches to addressing poverty in coastal communities and to help communities protect and restore their natural resources. For example, the subproject will produce practical examples of ways to incorporate sustainable fisheries reform in the context of country development strategies as well as ADB CSPs. We will also try to gain an understanding of why certain policies have failed in the past and how to model more successful policies especially through emphasizing community-based resource management. Specific policy recommendations aimed at improving the status of women in fisheries will also be developed.

3. Scope of Work/Description of Proposed Activities:

The three key components that provide the scope and outline the main activities are annotated below.

Component A: Understanding the Development Policy Context and *Reaching Out to Coastal fishing Communities*: The project's aim is the development pilot interventions/consultations and case studies that contribute to the poverty alleviation mission of the ADB particularly in the context of protection, conservation, and sustainable use of marine fisheries resources and ecosystem services to maintain and development the livelihoods of the poor in coastal communities.

Recognizing that marine fisheries resources are oftentimes trans-boundary in nature, the project will emphasize the importance of building collaboration among communities. As such, within each case study due consideration will be given to external influences and impacts on the coastal communities livelihoods. It is also important to understand how key national-level development policies filter down to the local level in the fishing communities, and how the institutional context affects outcomes in the fisheries sector.

A series of stakeholder consultations in the three coastal fishing communities in the Sulu Sulawesi seas is envisaged. Within each community, WWF would work with the relevant industry association, government agency and of course the ADB representative to engage the community in an evaluation workshop. These consultations would be used as the basis for the development of the case studies outline in component two below. Each consultative process will examine the obstacles and opportunities to mainstreaming sustainable fisheries in the development policies of the countries in the sub-region and develop a set of recommendations that would form the basis of region-wide consultation to develop eligibility criteria, monitoring and evaluation criteria and list of indicative project components.

Component B: *Poverty/Environment Linkages in Fisheries Community Case Studies*. The project will consist of three community-level case studies. Three communities will be selected based on 1) the importance of small-scale and subsistence fisheries; 2) the level of threat from over-fishing or other forms of environmental degradation; and 3) opportunities for future development of pilot projects based on study outcomes. The studies will be carried out by local research teams, with support and supervision from the WWF's marine conservation and macroeconomic programs and in collaborations with ADB's SERD and RSDD. PEP funds will be focused primarily in the Sulu Sulawesi seas communities.

Each of the three community-level assessments will examine:

- poverty-environment linkages in the fisheries sector, particularly how local outcomes are shaped by national policies
- obstacles to implementation of a more sustainable and equitable system that would improve fisheries-based livelihoods and promote poverty alleviation; and
- Opportunities and positive models for mainstreaming sustainable, equitable fisheries into development strategies.

The studies will identify critical issues related to fisheries management and poverty alleviation in the selected countries, looking at local, sub-national, national and international levels. Identification of the critical obstacles and recognition of opportunities is intended to promote integration of sustainable fisheries into development and poverty alleviation strategies. It should also facilitate identification of strategic interventions, at the local level or the policy level, to remove the main obstacles to sustainable ecosystem management and long-term poverty reduction. In addition, the results of the studies will be used to further refine the methodology, in order to ensure its applicability in other countries of the region, and to contribute to a wider dialogue on poverty and management of marine resources.

Component C: *Communicating and Sharing Pilot Interventions and Case Studies with Regional Stakeholders*: At the end of the consultative process and using the pilot interventions and case studies, WWF in collaboration with ADB will host a small regional workshop to share its findings and discuss opportunities for incorporating coastal livelihoods and sustainable fisheries as part of country strategy papers, national development strategies and solicit input on mechanism for improving information dissemination on the relevance of sustainable fisheries and coastal livelihoods in regional economic development plans and strategies.

The proposal indicates activities including local and regional workshops, and preparation of a series of study documents.

4. Work plan and Reporting

Activity	2006			
	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Recruitment of consultants (See Appendix B: TOR for Consultants)	XXX			
Selection of Communities in consultation with ADB staff and develop desk studies for each country	XXX	XXX		
Conduct pilot interventions/community consultations		XXX	XXX	
Complete Case studies			XXX	XXX
				XXX
Hold Small regional workshop				XXXX

5. Expected Output and Outcomes

Outputs:

1. Three case studies identifying obstacles to mainstreaming sustainable fisheries in national development strategies including sets of recommendations for achieving integration.
2. Three community pilot interventions/consultations identifying issues associated with maintaining and improving coastal livelihoods through sustainable fisheries and coastal zone management
3. Host a small regional workshop, in cooperation with ADB, of stakeholders from the region including fishing industry representatives, fishermen's associations, civil society organizations, international donor agencies and technical agencies.

Outcome:

Based on the outputs indicated above, three communities will have identified needs to address the development of poverty reductions strategies/economic development strategies based on sustainable fisheries for the benefit of the local populations. In addition, these three pilot interventions would have draft proposals for funding implementation. Each intervention and case study would identify opportunities for replication, as appropriate in other parts of the region.

A performance indicators matrix is provided in Appendix C.

6. Subproject Evaluations and Information Dissemination

The project officer (s) will undertake two review missions: one inception and one final during which time a regional workshop will be held. A wide array on national stakeholders (Government, NGOs and Fishing Communities) and international donors will be invited to these workshops to assess and review the progress. The draft final report will be subjected to interdepartmental reviews within ADB, WWF-Network and key players and stakeholders involved in the process.

A user-friendly knowledge management brochure will be created based upon the experiences, outputs, and outcomes will be used to engage a broader stakeholder engagement process in the entire ADB region.

Information dissemination would come through this broader engagement. Subprojects would be peer reviewed during the region wide engagement as well as through evaluation and monitoring mechanisms of the ADB and WWF.

7. Scope of Replication/Use in other DMCs

There is much scope for replication of the lessons to be generated from this proposal. This first one-year phase would create models that could also be for replicated in counties in the Gulf of Thailand, Indian Ocean, Bay of Bengal and the Pacific Island countries.

D. COST ESTIMATE AND DISBURSEMENT SCHEDULE

Funds requested from PEP: \$50,000US. WWF-US contribution of 50,000US. Total budget: \$100,000US (Appendix D)

E. PROPOSED SUBPROJECT MANAGEMENT SYSTEM

The subproject will be managed in close consultation with ADB's Southeast Asia Department (SERD). It will be supervised by the Directors of Marine Conservation Policy and Poverty Environment programs at WWF-US in collaboration with WWF's field staff including Dr. Jose Ingles based in the Philippines and Dr. Lida Pet-Soede in Indonesia.

Appendix A

Methodology for Socioeconomic Review of Fisheries Sector

Pamela Stedman-Edwards

PURPOSE OF METHODOLOGY: To examine the obstacles and opportunities facing development of sustainable fisheries regimes that would support poverty alleviation in the selected developing country.

The analysis will review:

- existing threats to marine fisheries and fisheries-based livelihoods
- obstacles to implementation of a more sustainable and equitable system that would promote poverty alleviation; and
- opportunities and positive models for mainstreaming sustainable, equitable fisheries into development strategies.

It will use this review to identify critical issues related to fisheries management and poverty alleviation in the selected country as the basis for developing an integrated strategy for sustainable, equitable fisheries. These issues should be addressed through national poverty reduction plans and investments in fisheries sector management. The methodology is not intended to recommend particular solutions; it is intended to promote integration of sustainable fisheries into development strategies and to guide investments in a sustainable fisheries program.

LONG-TERM GOALS:

- Sustainability of fisheries and coastal ecosystems, which provide critical resources (cash, nutrition, other natural resources) to local peoples and generate significant national income.
 - Sustainability and improvement of fisheries-based incomes and livelihoods to alleviate poverty.
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This paper first presents the background to the methodology, including an overview of current issues in the fisheries sector, a brief discussion of conservation issues in the sector and of the relationship between poverty, vulnerability and fisheries, and some caveats regarding recommendations. The second section presents the 4-step methodology, which is followed by a set of guidance questions intended to facilitate the analysis. A series of boxes/appendices at the end of the paper describe several relevant terms in greater detail.

BACKGROUND:

Worldwide, marine resources are under threat. This is a result of the expanding fishing industry as well as the degradation of coastal habitats that are essential in the lifecycle of many marine species. Recent estimates find that 11 of the world's 15 major fishing areas and 69% of the world's major fish species are in decline (FAO). Coastal areas are becoming increasingly populated and degraded; one-third of the world's coastal ecosystems are at risk and another 17% are at moderate risk (WRI). This is of great concern for fisheries because coastal ecosystems support almost two-thirds of all fish harvested at some point in their lifecycle (World Bank 2004). The population living within 100 kilometers of a coast is now 2.2 billion people (World

Bank 2004), which means that marine pollution is increasingly contributing to coastal and fisheries degradation.

Fishing contributes substantially to the GDP of many countries, as well as to their foreign exchange earnings. For some maritime countries, the contribution to GDP is as much as 10-13% (World Bank 2004). Capture fisheries and aquaculture are particularly important for developing countries. Nearly half of the fishery export trade originates in developing countries (FAO)². Fish is the most heavily traded food commodity and fisheries products have been the fastest growing agricultural trade commodity, at an annual rate of about 4% through the 1990s. Net exports of fisheries products from developing countries grew from US\$ 3.7 billion in 1980 to US\$ 18 billion in 2000 (World Bank 2004)³. Globally, demand for fisheries products is expected to increase from 91.3 million tons in 1997 to 127.8 million tons in 2020 (Delgado et al. 2003)⁴, with a consequent rise in prices. However, unsustainable expansion of commercial fishing fleets (primarily in the developed countries) and growth in the numbers of subsistence and artisanal fishers in developing countries in recent years--along with the declines in some important fish populations--has meant that fisheries-based incomes are falling.

Fisheries are an important source of employment, income, and nutrition in many developing countries. Of the 50 million people in the world involved in the harvesting and processing of marine fish, about 95% are from developing countries (World Bank 2004). In recent years the population of small-scale fishers has been swelled by poor people who have lost other livelihood options. The number of fishers and aquaculturists has grown faster than the world's population, and faster than employment in traditional agriculture (FAO). There are now an estimated 30 million full-time small-scale fishers worldwide (World Bank 2004), and over 50 million people directly involved in harvesting or processing of fish and aquatic products (ICLARM 1999 cited in World Bank 2004). Given the number of full-time fishers, the World Bank estimates that about 250 million people in developing countries depend directly on the fisheries sector for food and income (World Bank 2004).

Women in fishing communities play an important role, particularly in processing and marketing fish and in maintaining gear such as nets. They also tend to be involved in activities like seaweed and sea cucumber collection, collection of wild shrimp in mangrove areas, collection of octopus, shell collection, drying, salting and preserving fish, frying and vending for the local market. Women are often a vital link between fish catching and sale. However they face many disadvantages in fully participating in the fisheries sector. They are usually not involved in fishing activities distant from the coast and even for coastal activities they do not possess gear, e.g. they may not have diving equipment that men may have so cannot go into deeper waters. As a result, their fishing activities are confined to lower value products (such as smaller lobsters and octopus). Most micro-credit and technical outreach programs for fisheries are aimed at men (for acquiring boats, motors, better nets etc.), again to the disadvantage of women.

² As of 1997, total fishery exports were worth US\$51 billion, equal to 10% of the value of agricultural exports (FAO).

³ Developing countries primarily export high-value fisheries products and import low-value products (World Bank 2004).

⁴ Per capita consumption increases are expected to occur primarily in Southeast Asia, Latin America, the Caribbean and China; per capita consumption is expected to decrease or remain stable in Africa, the Near East, Oceania and Russia (Delgado et al. 2003).

About 75% of the world fish catch is used for human consumption, so fish stocks have important implications for human nutrition. Fish is a staple food in the coastal regions of many developing countries, particularly in Asia⁵, among both fishers and urban populations. Fish supplies more than 50% of the animal protein in the diets of some 400 million people in some of the poorest countries in the world⁶(Williams 1996). Expanding populations in these regions mean that demand for fish for food is increasing substantially. Rapid growth of aquaculture has played an important role in human nutrition and poverty alleviation and has offset losses in capture fisheries. However, aquaculture is also a significant factor in the loss and degradation of critical coastal ecosystems.

In many places, subsistence and artisanal fishers are among the poorest populations. The FAO estimates that at least 20% of the world's full-time fishers earn less than US\$ 1 per day (cited in World Bank 2004). About 90% of the world's fishers are from Asia and Africa (FAO cited in World Bank 2004). The expansion of the population dependent on fishing and coastal resources—experienced mainly in Asia and, to a much lesser extent, in Africa—has been driven by population growth, development patterns, and economic crises. As competition for marine and coastal resources increases, so does degradation. The resulting decline in incomes reinforces cycles of poverty among small-scale and subsistence fishers. Fishing is increasingly a part-time occupation, supplemented by other activities, as more people move into the sector. Other resources from coastal areas, for example mangroves and coral, furnish many other basic necessities and become subject to degradation too.

Ensuring the sustainability of the livelihoods of the poorest populations of fishers is essential to promoting poverty alleviation. Ensuring a more equitable distribution of the benefits of the resource is also essential. At the same time, national benefits can be derived from the development of a sustainable fisheries industry, which can contribute to broader investments in poverty alleviation. However, the vulnerability of coastal populations and the potential role of sustainable fisheries in development have been largely ignored in development strategies.

Management of Fisheries:

The World Bank has stated that poor governance of the fisheries sector is the most important cause of over-fishing. Studies (cite?) suggest that many countries have not been able to reap the full benefits of their marine resources because of lack of appropriate governance regimes. In addition to promoting unsustainable use of marine resources, poor governance is also often to blame for the poverty of small-scale fishers. Governance institutions at the international, national and local levels all play a role in fisheries management. They also play a role in determining access to fisheries resources and rents, which determine the poverty impacts. Understanding the role of each of the governance institutions, and their interactions, is critical to understanding the obstacles and opportunities for improvements in the sustainability and equitability of the fisheries sector.

At the *local level*, traditional management systems (TMS) continue to exist in many developing countries. TMS establish a variety of local rules or norms for use and distribution of resources,

⁵ Average consumption figures for Africa are very low (FAO), but this probably reflects the difficulty of transporting fisheries products, and conceals the high levels of consumption in fishing communities.

⁶ The countries included here are Bangladesh, Cambodia, Equatorial Guinea, Ghana, Guinea, Indonesia, The Gambia, the Republic of the Congo, Sierra Leone, and Togo.

which are supported by community acceptance and community-based monitoring and enforcement. The goals of these systems vary, but several studies suggest that their primary goal has been prevention of conflict among fishers (Neiland and Béné 2004). Regardless of the intended goal, in some cases the results of TMS have included conservation of particular fisheries resources and/or more equitable distribution of access to fishing grounds or fisheries rents. In other instances, TMS serve to maintain inequity within communities. These traditional systems are evolving under the changing pressures on coastal and fisheries resources and in response to national-level interventions. However, their limited ability to respond effectively to increasing pressures—to maintain control over the resource through enforcement of local rules or norms—can create problems of open-access in coastal fisheries.

National governments intervene in the fisheries sector in a number of ways. Regulation of fishing—such as catch limits, gear restrictions, and area or seasonal restrictions—, and monitoring and enforcement capacity affect the sustainability of fisheries. Regulation or investment that affects access to resources—such as property rights, investment in coastal development, or construction of processing or transport facilities—affect equity and the opportunities for poverty alleviation. National governments can play a critical role in determining the balance between industrial or large-scale fishing and small-scale fishing, as well as in permitting access by foreign vessels. At the local level in developing countries, the national government is often notable for its absence. The difficulty of monitoring and enforcing rules on small-scale fishing is part of the reason for this⁷. The absence of a national enforcement authority leads to violations of regulations by small-scale and large-scale fishers, including nationals and foreigners. In other places, traditional rules coexist with national regulations that may alter the impact of the TMS on distribution or conservation.

International-level institutions also have a role to play, particularly regarding large-scale commercial fishing. On one hand, international demand drives some over-fishing. Subsidization of fishing fleets in developed countries and inequitable or unsustainable agreements on use of fishing rights mean that fleets from developed countries are putting pressure on the fisheries resources of developing countries. In addition, trade rules may be limiting the benefits that developing countries derive from export of fisheries products. On the other hand, a number of important international initiatives have been established to promote sustainable fisheries and improve the role of fisheries in poverty alleviation. These include the Code of Conduct (see Box 1), International Plans of Action, several initiatives under the Law of the Sea, and fisheries goals set under the WSSD (see box 4). The WSSD has called for the establishment of a representative network of marine protected areas by 2012 and the maintenance and restoration of the world's fish stocks to sustainable levels by 2015. In addition, addressing poverty and sustainability in the fisheries sector can make an important contribution to the Millennium Development Goals.

Conservation in the Fisheries Sector:

⁷ Some common characteristics of small-scale fisheries make monitoring and enforcement particularly difficult, namely: the catch is brought to shore (landed) at many different sites; many species are exploited; and many different types of gear (fishing equipment) are used. This diversity of techniques and species is positive from a livelihoods perspective, but is incompatible with many existing management techniques (Neiland and Béné 2004).

Conservation of marine resources will require limitations and reductions in the use of those resources as well as careful management. A variety of tools, new and old, are being used around the world, including limitations on areas that can be fished, on the number of fishers, on the size of the catch, on the type of gear that can be used, and on times or seasons when fishing is allowed. The choice of the appropriate tools to achieve conservation and sustainability will depend on the type of ecosystem as well of the type of exploitation. For example, coral reef areas support a limited overall production of biomass, but are important for the great diversity of species, many of which are exploited by small-scale fishers. These require very different management strategies than an ocean upwelling that provides large quantities of a few commercially harvested species. Places where the problems are generated by coastal degradation will require a different strategy than places where over-fishing is the culprit. Often scientific knowledge about local marine resources and sustainable management requirements are limited, so a fairly cautious approach to exploitation is desirable.

In looking at the causes of fisheries degradation, and at the solutions, it is important to recognize the strong interconnections among the various parts of the ecosystem. Degradation of on-shore coastal habitats affects not only coastal waters but also deep sea waters, and vice versa, given the mobility of marine species. Likewise fishing in coastal waters affects the availability of fish in deep sea waters, and vice versa. Loss or decline of particular species can affect the functioning of the entire ecosystem. Marine protected areas (MPAs) have clearly illustrated the role that no-go zones can play in revitalizing much larger areas of ocean, and the interconnectedness of different habitats. Given these links, the actions of small-scale fishers in coastal waters are directly affected by large-scale fishing further out; development of alternative livelihoods, such as aquaculture, can affect the fisheries of all fishers; extracting one species, intentionally or as by-catch, can affect the numbers of other species in the ecosystem; and so on. Understanding and addressing sustainability issues in fisheries requires recognition of this interconnectedness in both the ecological sphere, and the related socioeconomic sphere.

Poverty, Vulnerability, and the Fisheries Sector:

WWF understands poverty as a multi-dimensional condition, of which low income is one common characteristic. Poverty alleviation efforts must recognize the other factors which may contribute to the vulnerability of the poor. These include lack of access to financial, technical, or educational resources; limited control over resources of all types; limited voice in the governmental or social institutions controlling access to resources; limited opportunities resulting from isolation and scarcity of resources; and food or livelihood insecurity resulting from socioeconomic or environmental factors. These factors coincide to create a situation in which it becomes difficult to manage resources for the long-term, and in which livelihood opportunities are very limited. To describe this situation, we use the term *vulnerability*, rather than poverty, because it reflects the precarious situation of these communities.

Small-scale fishers are often among the poorest of rural populations (Neiland and Béné 2004). Poverty in the fisheries sector is sometimes due to sheer *scarcity* of the resource. More often, small-scale fishers are poor because of their *lack of access* to the fisheries resource. Small-scale fisheries are characterized by (Neiland and Béné 2004):

- Low capital input: low investment, low technology, low capital/labor ratio
- Low productivity: low catch per fisherman
- Remote locations: little access to government services, transportation

- Limited marketing and commercialization facilities

All of these characteristics contribute to small-scale fishers' poor access to fisheries resources, whether those resources are abundant or scarce. At the same time, their poverty means that there are few other resources or livelihood options open to them⁸. Fishing can be a critical part of a risk reduction strategy for many coastal poor (World Bank 2004). Fisher families may engage in farming, farm labor, resource extraction, or other rural activities in addition to fishing. Likewise, rural and urban families may rely on fishing as a fallback activity in difficult times. For these peoples, access to fishing resources, or the lack of access, may determine their vulnerability to crisis.

Many studies of links between environmental degradation and poverty have found that these two phenomena tend to be highly concentrated in the same vulnerable ecosystems. Sometimes this is a question of direct cause and effect, that is, a vicious cycle of poverty and over-exploitation of resources. In other places the resources which vulnerable people depend upon are over-exploited by outsiders or by a few community members, over whom the local community has limited control. In both cases the result is the same: degradation of resources and increased vulnerability of the ecosystem and the human population. WWF holds that addressing poverty alleviation must go hand-in-hand with conservation efforts in these places in order to be successful.

Because vulnerability in the fisheries sector is frequently due to this combination of circumstances, ensuring sustainable use of marine resources will not be sufficient to alleviate poverty. Redistribution of access to fisheries resources, or to the benefits derived from fisheries, will be essential to alleviating poverty. There are at least two implications of this conclusion in the context of over-fishing: First, benefits may need to be redistributed within communities to the poorest. Second, benefits may need to be redistributed from large-scale fishers to the small-scale fishers. Redistribution will mean not only improved rights to the resources but also improved capacity to make use of those resources. International, national, and particularly local institutions will have roles to play in promoting poverty alleviation in the fisheries sector.

Making Recommendations:

WWF works from the premise that local populations will have the greatest interest in ensuring sustainable use of resources, particularly if a clear connection can be made between sustainability and improved livelihoods. Co-management regimes (see box 3 below), in which communities and governments cooperate in the management of fisheries resources, offer an opportunity to meet national development goals and ensure local rights. Regional, national and international factors may create obstacles or incentives to development of local sustainable management institutions. Addressing the conservation of marine resources and poverty alleviation will require removing those obstacles and increasing the incentives to local sustainable management systems.

In promoting conservation, we need to ensure that neither developing countries nor poor communities within those countries are further disadvantaged. The redistribution of benefits from fisheries within a context of conservation will require that:

⁸ Notably the poorest fishers are those with the least access to fisheries; as a result they often rely heavily on non-fisheries resources that are less desirable than fisheries resources (Neiland and Béné 2004). In this regard, the poorest fishers probably contribute heavily to coastal degradation, for example, through harvesting of mangroves.

- developed countries accept a more equitable distribution of benefits as essential to conservation.
- national governments improve the capacity of fisheries institutions to manage resources both for conservation and equity.
- local institutions work with national institutions to develop systems for resource management and benefit distribution that ensure sustainable use of the resource and are inclusive of all members of their community.

PROPOSED METHODOLOGY:

The methodology outlined here takes a four-step approach designed to⁹:

- Understand the international, regional and national context of the selected country's fisheries sector.
- Identify the places where vulnerable human populations are dependent on vulnerable fisheries, species, or marine or coastal habitats.
- Describe the links between local vulnerability or unsustainable use in these places and local, regional, national and international socioeconomic and institutional factors.
- Outline critical issues to be addressed locally, nationally and internationally in order to remove obstacles and promote opportunities for improved sustainability and poverty alleviation.

Step 1. Overview of the Fisheries Sector

First, we recommend an overview of the **national and international factors** that are shaping the use of marine resources. This overview should describe the place of fisheries in the economy. It should provide an understanding of how national and international institutions and economic trends shape access to fisheries resources. And it should describe the incentives or disincentives these institutions create to sustainable and equitable use. The review will cover:

- role of fisheries in the national economy, including contribution to national income, foreign exchange earnings, nutrition;
- sectoral characteristics, such as share of large-scale fishers, small-scale and subsistence fishers, and national capacity for processing and marketing;
- Role of women in the fisheries sector
- international and bilateral agreements on fisheries management, fishing rights, and trade in fisheries products;
- role and capacity of government institutions (national and state/provincial level) in natural resource management;
- consideration given to the sector in existing development, conservation, and poverty alleviation strategies.
- Insights gathered from previous research and projects related to fisheries in the country

Step 2. Vulnerable Places and Peoples

Second, we recommend a bottom-up analysis of the situation of the most **vulnerable fishing communities**. This step is intended to identify the places where vulnerable human populations and vulnerable marine resources coincide, with the twin goals of:

- determining the size and location of the vulnerable population dependent on fisheries.
- selecting one or more typical communities for more in-depth investigation.

This analysis can be focused by overlaying a map of the most vulnerable fishing communities with a map of over-fished or otherwise degraded marine and coastal areas. While there are advantages to creating vulnerability maps for this purpose, it will often be sufficient simply to identify a list of the most vulnerable places and peoples and determine where they coincide. This allows us to identify the places and peoples most vulnerable to poverty-environmental degradation spirals, with some approximation of the area and numbers of people involved.

⁹ This methodology focuses on the socio-economic issues in sustainable management and poverty alleviation; it does not address the biological side of fisheries management, which should be considered in parallel to this review.

Identifying vulnerable communities will require looking not only at income levels but also at the other facets of poverty, such as isolation and lack of access to resources. The analysis will need to look at the threats and the obstacles or opportunities that are facing these vulnerable communities. Direct threats will include those that limit access to fisheries resources:

- population growth;
- in-migration;
- over-exploitation of marine and coastal resources for subsistence or basic livelihoods;
- destructive fishing practices;
- Gender inequalities and the particular access problems that women face
- increase in local fishing by the national or foreign fleet;
- coastal development that degrades critical habitats through pollution, erosion and deforestation.

Any or all of these can contribute to declining fish stocks; they also increase the vulnerability of local people.

Vulnerable places can be identified based on data on fisheries takes, biodiversity, habitat degradation, or other environmental measures. Factors to be taken into consideration include:

- priority in terms of biodiversity—species richness, rarity of species or ecosystem, representativeness, intactness, role in determining survival of the ecosystem assemblage
- perceived threat from human activities,
- priority as a fishing ground
- decline in number of species or individuals
- decline in habitat area

Step 3. Case Study: Finding the Links and Organizing the Information

Third, one or more of the places identified in this step can be used as brief **case studies** to investigate the causes of fisheries degradation. Examining the direct and indirect causes of unsustainable and sustainable resource use, particularly with a focus on issues of governance and equity, will allow us to identify the obstacles and opportunities for sustainable management.

To conduct this bottom-up analysis, we recommend a review of the direct environmental threats at the local level and the characteristics of human vulnerability, complemented by a review of the role and capacity of local institutions. A critical part of this analysis will be to:

- Evaluate the local capacity to address issues of sustainability and equity.

In many ecosystems, a sustainable fisheries regime will require community-based institutions--either formal or informal--capable of defining fishing rights and fisheries management regulations, or of working with national institutions through co-management arrangements (see Box 3 below) to accomplish these goals. These institutions will also need to address equity issues within the community. The local obstacles to development of such institutions may be social, economic, cultural, political or technical. Obstacles to improvements in livelihoods may include:

- inequity in decision-making
- lack of appropriate or effective institutions
- limited resources (environmental, financial, technical etc)

The local threats and obstacles can often be linked directly with the national and international factors described in Step 1 of the analysis. Putting this information together allows us to:

- Identify how economic incentives, population pressures, and other factors drive unsustainable exploitation of marine and coastal resources;
Examples:
 - Over-investment in large-scale fishing.
 - Growing poor coastal population.
 - Falling incomes among fisher population.
- Identify how international and national governance are shaping local resource use;
Examples:
 - National institutions focused on production over sustainability
 - National institutions with weak enforcement capacity
 - Decentralization of fisheries management
 - Bilateral fishing agreements
 - International agreements promoting MPAs and less damaging techniques
- Identify how regional and national institutions, laws, environmental, and socioeconomic trends shape opportunities for development of sustainable management regimes and poverty alleviation;
Examples:
 - Institutions governing fishing rights that empower/dis-empower local communities
 - Political support/lack of support for sustainable fishing
 - Government recognition of the interconnectedness of coastal and marine resources
 - Government commitment/lack of commitment to poverty alleviation in coastal communities
 - Opportunities/lack of opportunities for alternative livelihoods

This last category can be described as the obstacles or opportunities to sustainable development of fisheries.

Identifying how these forces play out in a typical poor coastal community should provide a strong understanding of their impact—positive or negative—at the national level. In addition, finding and characterizing positive models of sustainable fisheries management will be useful for identifying the changes that need to be made in local patterns as well as regional and international factors. People will need to see clearly how they will benefit from improved sustainability and equity if they are to initiate changes.

Step 4. Defining Critical Issues to Address in Policy and Project Investments

Fourth, this information will be used to define the **critical issues** that must be addressed in order to improve the sustainability of fisheries while improving livelihoods.

The study conclusions should point out the critical issues at each level, as appropriate, that need to be addressed. These will include issues related to:

- international factors that are promoting fisheries degradation or inequity;
- national capacity to design and enforce appropriate solutions that will balance national income benefits with poverty alleviation, including capacity to foster appropriate management regimes at a local level

- local community involvement in/commitment to sustainable management of resources

This information could be presented in the form of a detailed list, or in the form of a diagram illustrating how various constraints are affecting the development of sustainable fisheries strategies.

A number of critical issues will need to be addressed internationally—notably over-capitalization and subsidies in developed countries; international fishing rights and trade agreements that fail to treat developing countries equitably; and development investments that do not take adequate account of the links between poverty and decline of fisheries. Others tools will need to be implemented at the national level, such as those to strengthen management institutions and reduce vulnerability of small-scale fishers. These will require good institutional models. The impact of these international and national improvements is felt at the local ecosystem level. In most cases incentives and models for sustainable, equitable management systems will need to be created at the local level as well.

Each country needs to set its own objectives in terms of both ecological and economic sustainability and poverty alleviation. The existing international frameworks, such as the Code of Conduct and WSSD and World Bank recommendations (2004), provide some guidance and options for objectives. Development and poverty reduction strategies, such as PRSPs, afford a place to integrate the fisheries sector into the mainstream of country-level planning.

Clear understanding of the *trade-offs* that are being faced is essential in designing governance systems for fisheries. While win-win situations do exist, in many cases trade-offs will need to be made between sustainability and national income or employment, between poverty alleviation and increasing foreign exchange earnings, and between conservation and improving nutrition. Recognizing these trade-offs is essential to the decision-making process. The information developed by this analysis—particularly that regarding vulnerable populations and their dependence on fisheries—will be an important input.

A variety of tools exist for improving fisheries management--such as integrated coastal management, ecosystem approach to fisheries, marine protected areas, co-management regimes, international/bilateral agreements on fisheries, international/bilateral trade agreements, aquaculture and other alternative livelihoods, certification programs and others--which can be used to improve both sustainability and equity. Some of these will need to be implemented at the international level, others at the national, regional or local level. This analysis is not intended to provide a blueprint for implementing sustainable fisheries; rather it provides the information needed to begin a discussion about goals and options for improving both sustainability and equity in fisheries.

GUIDANCE QUESTIONS FOR THE 4 STEPS:

This section provides a series of questions which should help researchers work through Steps 1 to 4. The relevance of particular questions will vary from case to case.

Step I: Overview of Fisheries Sector

Role in the National Economy

How important are marine resources to the national economy?

Contribution to GDP, exports, food supply

What is the shape of the sector?

Mix of operations? Industrialized, small-scale, subsistence

Species fished

Share of aquaculture

What are the links to poverty?

Contribution of fishing/coastal resources to income of the poor

Contribution to nutrition of the poor

May need to include the urban poor as well as fishing population

Who are the poor fishers? Traditional or new poor?

What are the barriers that women face in participating in the fisheries sector?

Does commercial, large-scale fishing and fish processing provide jobs? For whom?

Efficiency of technology, marketing—can they get fish to the market?

What alternative livelihoods exist?

Threats

What are the threats to fisheries and other marine resources?

Over-fishing?

Degradation, pollution of coastal or marine habitats?

What are the immediate causes of these threats?

Growing local fishing fleet? Growing national fishing fleet?

Agreements allowing fishing by foreign countries? Illegal fishing by national or foreign fleet?

Inappropriate fishing techniques?

Migration to coastal regions?

Deliberate development of coastal regions (such as tourism expansion)?

Role of International and Bilateral Agreements and Institutions

Does the country participate in international agreements on fishing, on trade?

What appear to be the economic and environmental consequences?

Are there consequences for international lending?

Does the country participate in bilateral agreements on fishing rights (access) or trade?

What appear to be the economic and environmental consequences?

Are there consequences for development lending?

Existing National, Regional Management Institutions and Tools

Describe the government institutions responsible for fishing rights, management; capacity for monitoring, enforcement, conflicts with other agencies, legal instruments; marine reserves

Do existing institutions govern for sustainability? Do they have appropriate capacity for monitoring and enforcement?

Do they have sufficient scientific information to govern for sustainability?

Do existing institutions allow opportunity for maintenance/development of traditional or new local/regional property rights, monitoring, enforcement institutions?

Development strategies:

Do these strategies (national, regional, PRSPs, etc.) take account of the economic role of fisheries, relationships with poverty, potential for livelihoods, environmental threats?

Past research:

What insights can be gathered from past research and projects? Which policies have worked and which haven't and why? What is the consensus on best management practices?

Step II: Vulnerable Places and Peoples

Identifying Vulnerabilities

Where do human vulnerability and threats to marine resources coincide?

Map of fishing communities, poverty, threats (vulnerability)—based on reliance on fishing plus income or other measure of poverty (either an actual map or a description)

Map of endangered, threatened marine resources, coastal resources (vulnerability) (either an actual map or a description)

How many places and people fall into this category—ie coincidence of human and environmental vulnerability?

Describe the threats to fisheries and the links between poverty and fisheries degradation—common direct threats to sustainability and to local livelihood to consider:

Growing fishing fleet—local, national or foreign

Lack of local control over fisheries resources—legal or illegal incursions by local, national and foreign fishing fleet

Growing population of small-scale fishers

Gender inequities that pose problems for women fishers

Migration to coastal areas

Development of coastal areas that damage coastal resources that support fisheries, ie wetlands, mangroves, swamps

Selecting the Case Study:

Select a typical coastal community for the brief case study:

Is the community typical in terms of human vulnerability?

Is the type of marine resources and the use of marine resources typical?

Are local social structures and institutions typical?

Step III: Case Study: Finding the Links and Organizing the Information

This step is intended to bring the overview and the bottom-up reviews together in order to consider the role and importance of the macro-level factors in driving the use of fisheries and links with poverty in real places.

Local Factors

What regional/local factors are driving local resource use patterns?

Consider: local property rights, community management regimes; population pressures, role of women, incursions by migrants, economic pressures, incursions by large scale commercial fishers, efficiency of processing

What local institutions, tools exist for management of fisheries resources? Are they effective?

National Factors

What national factors are driving local resource-use patterns?

Consider: government fisheries departments (issues of funding, accountability, contact with local fishers); availability of data on fish stocks, ecosystems, income from fisheries, income forgone in int'l agreements; property rights regimes for fisheries, development of coastal areas, growth of industrial scale fishing/processing

International Factors

What international factors are driving local resource use patterns?

Consider: existing fishing rights agreements, international code of conduct/ conservation agreements, WTO and other trade laws

Step IV: Defining Critical Issues to Address in Policy and Project Investments

Why is it difficult to develop and/or maintain local fisheries institutions? Consider the role of the factors listed above (see box below on World Bank paper)

Why is it difficult to develop and/or maintain local fisheries institutions? Consider the role of the factors listed above (see box below on World Bank paper)

What positive approaches, institutions could be replicated or expanded? What institutions/tools exist for promoting sustainability? What tools exist for improving local incomes?

How can interventions be targeted to meet the needs of women fishers?

Why is it difficult to develop and/or maintain local fisheries institutions? Consider the role of the factors listed above (see box below on World Bank paper)

What trade-offs are involved?

E.g. drop in national fisheries-based income, increase in urban food prices

BOXES

Box 1: Sustainable Fisheries Governance Policies

The *Code of Conduct for Responsible Fisheries* provides the following checklist of sustainable fisheries governance policies¹⁰:

- The level of fishing permitted is commensurate with the state of fisheries resources.
- No vessel is allowed to fish unless authorized to do so, and in a manner consistent with international law for the high seas or in conformity with national legislation within areas of national jurisdiction.
- Where excess fishing capacity exists, mechanisms are established to reduce capacity to levels commensurate with sustainable use of fisheries.
- The performance of all existing fishing gear, methods, and practices is examined and measures are taken to ensure that those that are not consistent with responsible fishing are phased out and replaced with approved alternatives.
- Fishing is regulated to avoid conflict among fishers using different vessels, gear, and fishing methods.
- When deciding on the use, conservation, and management of fisheries resources, due recognition is given to traditional practices needs, and interests of indigenous people and local fishing communities that are highly dependent on fishery resources for their livelihood.
- In the evaluation of alternative conservation and management measures, their cost-effectiveness and social impacts are considered and continuously monitored and eventually revised, where and when needed.
- Appropriate measures are taken to minimize waste, discards, catch by lost or abandoned gear, catch of nontarget fish and non-fish species, and negative impacts on associated or dependent species, particularly endangered species.
- Measures are introduced regarding depleted resources and those resources threatened with depletion that facilitate the sustained recovery of such stocks, including restoration of habitats critical to the well-being of those resources.

Box 2: Components of Fisheries Management Regimes

A key World Bank report on the sector, *Saving Fish and Fishers: Toward Sustainable and Equitable Governance of the Global Fishing Sector* (2004), identifies 5 components of the institutional regimes for fisheries. It finds that all regimes—successful or unsuccessful—have each of these components in some form. Ensuring that each is designed to promote sustainable fisheries management and improved livelihoods is essential for establishing a sustainable fisheries regime.

Fisheries Management System: rules (legislated or based on custom, local institutions) governing gear and area restriction, licenses, catch quotas etc., scientific information needed for management decisions

Monitoring, Control and Surveillance System (MCS): to observe and enforce adherence to the rules.

¹⁰ World Bank. 2004.

Fisheries Judicial System: to process violations of rules and issue sanctions. The judicial system complements the MCS activities in enforcement.

Decentralized Decision-making and Collaborative Management (co-management): to reach consensus and legitimize actions among multiple interests. In an effective co-management system, government and resource users share responsibility for decision-making and for management of the fisheries resources (see box 3 below).

Definition of Access Rights: to ensure security and exclusivity of property rights. In fisheries these can be based on licenses, quotas or territorial access rights, or other restrictions on use of otherwise open-access resources.

Box 3: Co-Management Regimes: Collaborative Fisheries Management¹¹

Co-management regimes are a compromise between centralized government control of resources, regulation, and enforcement, and community-based or resource-user-based control. It is particularly useful for small-scale fisheries. Co-management regimes range from one end of the spectrum to the other—some very heavily on government control, others rely very heavily on the communities.

Key components of successful co-management approaches include:

- “Clearly defined and legally recognized community/stakeholder ownership (or right to manage) of the fisheries resource; that is, power to restrict access, and harmonized with national law.
- “Constant attention to the composition of the stakeholder group, to ensure that social equity outcomes are adequately addressed in resource access decisions, and appropriate institutional mechanisms for communities/stakeholders exist to communicate needs to government and to take an active part in the policy process.
- “Significant initial education assistance to communities/stakeholders, and organization to formulate rules of access and use of the fisheries resources. Research agencies including regional universities and technically competent NGOs often have provided critical support to local management efforts.
- “Adequate provision of information and technical assistance to assist the stakeholders in adapting policies to specific local rules and regulations, technical assistance (such as monitoring, ecosystem health, trade, and food safety information) to provide the necessary information to allow stakeholders to make sound fisheries resource management decisions.
- “Broad publication by government and communities/stakeholders of the rules they have formulated for governing the use of the fisheries.
- “Adequate monitoring and enforcement rules in aquatic systems, receiving government assistance where necessary for enforcement of rules governing the use of the small-scale fisheries (such as conflicts with medium-scale and industrial fisheries.”

Box 4: International Agreements

A number of international agreements govern fisheries and marine and coastal resources. Some of the most important are listed here. In addition to these, many bilateral and other international

¹¹ World Bank. 2004. Saving Fish and Fishers. p.43.

agreements are relevant to the sector, such as trade agreements, though they do not target it directly.

- FAO Code of Conduct for Responsible Fisheries (1995), supplemented by the Rome Declaration on the Implementation of the Code of Conduct for Responsible Fisheries (1999) (see box 1). A set of principles and international standards of behavior for responsible fishing practices which considers economic, social, biological and environmental aspects as well as the interests of users.
- International Plans of Action (voluntary): developed under the framework of the Code of Conduct on:
 - Reducing Incidental Catch of Seabirds in Longline Fisheries
 - Conservation and Management of Sharks
 - Management of Fishing Capacity
 - Prevent Deter and Eliminate Illegal, Unreported and Unregulated Fishing
- United Nations Convention on the Law of the Sea—various provisions are relevant:
 - Agreement to Promote Compliance with International Conservation and management Measures by Fishing Vessels on the High Seas;
 - Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem;
 - Efforts to Combat and Deter Illegal, unreported, and Unregulated Fishing Activities;
 - Monitoring, Control and Surveillance (MCS) Network.
- World Summit on Sustainable Development (WSSD): “participating governments agreed to maintain or restore the world’s fish stocks to levels that can produce the maximum sustainable yield by 2015; help developing countries coordinate policies and programs to conserve and sustainably manage fishery resources; and establish a representative network of marine protected areas that are consistent with international law and based on scientific information by 2012.” (World Bank 2003 p.2)

Box 5: Ecosystem Approach to Fisheries

The Ecosystem Approach to Fisheries (EAF) recognizes that sustainable fisheries management must consider the entire marine ecosystem that supports the fisheries. It must go beyond management of a few commercial species because harvesting any species has numerous impacts on other species and on the habitat. The EAF also takes fisheries management beyond a simple focus on the biological aspects of fisheries management. According to the FAO “An Ecosystem Approach to Fisheries strives to balance diverse societal objectives, by taking into account knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries (FAO 2002a). Working at the level of the broader ecosystem makes it necessary to address the sometimes conflicting needs of different user groups. EAF is most successful when it is able to create a broad stakeholder base and to link fisheries management with broader issues of coastal and ocean planning. According to the World Bank (2004 p.25), the benefits of EAF include not only sustainable fish harvests, but also:

“Greater economic and social benefits, including fisheries that produce higher catches at lower costs;

“Fewer conflicts among competing users;

“Fewer disruptive surprises, which might occur otherwise because ecosystem changes are not foreseen and/or are not taken into account, or become more likely as ecosystems are increasingly perturbed by fishing; and,

“Continuing social acceptance of fisheries as a responsible use of marine ecosystems.”

Box 6: Marine Stewardship Council

The Marine Stewardship Council promotes ecolabelling in fisheries. It has developed an environmental standard for sustainable and well managed fisheries based on 3 principles (MSC):

- A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.
- Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.
- The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

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www.fao.org

www.wri.org

Appendix B

Draft Consultant Terms of Reference

The consultant will assist with desk and in-country research, manage local country research teams and write three country case studies in Indonesia and the Philippines in collaboration with the country research teams and local WWF offices (where possible), and with input from the WWF-MPO and marine conservation programs in Washington DC. Specifically, the tasks will include:

- Desk reviews of the state of marine fisheries in Indonesias and the Philippines, with emphasis on the information requirements of the Methodology paper (written by Pamela Stedman-Edwards). Two of these reviews will also result in identifying two or three key areas of concern for further research to be conducted by the country research teams in country.
- Trips to two countries to identify research teams, draft TORs for them, provide them with information on the methodology and agree on the research question(s). The research question could focus on a particular geographic area or ecosystem or issues such as poverty and environment connections and trade-offs.
- Maintain contact with the WWF EPO and the WWF-US Marine and Fisheries offices to ensure that this research can be useful to them.
- Manage the country research teams as they engage in their work.
- Repeat trips to countries to ensure final deliverables from country research teams and possibly do some capacity building/outreach activities.
- Write final country case studies; two of the case studies will incorporate in-country research. Each case study will be approximately 20-25 pages in length. At opportune times the consultant will look to the MPO and marine conservation program for comments and other feedback to ensure that the final product is satisfactory to all.

Deliverables and Due Dates*

1. Finalize TORs - March 2006
2. Draft desk reviews for two countries ~ August 2006
3. Prepare guidelines for in country teams - August 2006
4. Coordinate with country teams to ensure completion of their deliverables ~ November 30, 2006
5. Draft case studies ~ December 15, 2006
6. Final case studies ~ January 15, 2006

* All deliverables and due dates may be adjusted by agreement of both parties based on the timing of travel and the ability of local country research teams to deliver their part of the research in a timely fashion.

Appendix C
Expected Outputs and Outcomes

	Result	Performance Indicator
Outcome	Identification of Institutional, financial and policy barriers to mainstreaming fisheries in CSPs and national development strategies	<ul style="list-style-type: none"> • Development of recommendations for reforming institutional barriers to investment • Identify specific ADB investment opportunities
Output	two-three cases studies examining the poverty-environment linkages and recommended policy reforms	<ul style="list-style-type: none"> • Successfully demonstrate the benefits to ADB investment from incorporating sustainable fisheries into bank programs • demonstrate benefits to coastal communities
	. two-three consultations/ stakeholder engagement exercises	<ul style="list-style-type: none"> • Successfully identify issues associated with maintaining coastal livelihoods and the role of ADB and government development strategies
Activities	1. Peer review Methodology for regional application	<ul style="list-style-type: none"> • Completion date
	2. Conduct desk assessments for Indonesia and the Phillipines	<ul style="list-style-type: none"> • Completion date of desk assessments
	3. Conduct field research, surveys and engagements base on methodology	<ul style="list-style-type: none"> • Completion date of field research
	4. Preparation of Publication	<ul style="list-style-type: none"> • Publication date
	5. Dissemination	<ul style="list-style-type: none"> • Date dissemination complete
Inputs	<ol style="list-style-type: none"> 1. WWF Staff 2. Consultant 3. Travel 4. Equipment and Office 5. Workshops 6. Publication 	<ul style="list-style-type: none"> • \$ and person-months • \$ and person-months • \$ • \$ • \$ • \$

Appendix D
Proposed Budget (in US \$)

Item	WWF Contribution	ADB Contribution	Total	Disbursement
1. Preparatory Activities (revise methodology)				
-Consultants	1,000	1,000	2,000	
-Travel				
-Equipment (specify)				
-Others (specify)				
2. Implementation activities: preparation of desk assessment and case studies				
-Consultants/	10,000	10,000	20,000	
-Travel	4,000	4,000	8,000	
-WWF staff	10,000	10,000	20,000	
-Others (specify)				
3 Hold local stakeholder meetings, surveys and consultations				
-Consultants	5,000	5,000	10,000	
-Travel	1,000	1,000	2,000	
-WWF staff	4,000	4,000	8,000	
-Others (workshop and survey expenses)	10,000	10,000	20,000	
4. Preparation of final reports				
-Consultants	5,000	5,000	10,000	
-Travel				
-WWF staff				
-Others (production costs of publication)	5,000	5,000	10,000	
Total Expenses	50,000	50,000	100,000US	