



STRATEGY FOR IMPROVING INFORMATION
ON STATUS AND TRENDS OF CAPTURE
FISHERIES



INTERDISCIPLINARY ASSESSMENT AND MANAGEMENT OF SMALL-SCALE FISHERIES AND THEIR ROLE IN FOOD SECURITY AND POVERTY ALLEVIATION

A Project Concept Note

Objective

This project will significantly increase the sustainable contribution of small-scale fisheries to food security and the alleviation of poverty. In order to achieve this ambitious objective, the project will develop new tools for assessing sustainability, provide new guidelines for making the lives of people dependent on SSF more resilient to change (ecological, social, or economic), and improve the capacity of the countries to assess and manage their fisheries.

Background

At least three quarters of the world's 30 million fishers work in small-scale fisheries¹. If fisheries-associated livelihoods, such as marketing and processing as well as children and the elderly are also included, an estimated 150 million people directly depend on small-scale fisheries and associated industries. A large figure in itself, its significance further lies in the extent to which these people belong to the poorest and most vulnerable sections of the global population. The World has 1.1 billion people living on less than US\$1 per day. Even if the incidence of poverty among fishery-dependent people was only as high as the average in their respective countries, there would be some 23 million fishery-dependent people living on less than US\$1 per day.

The importance of these statistics from a development perspective is re-enforced by the fact that small-scale fisheries provide about half of the world's fisheries production used for direct human consumption; about 1 billion people rely on the sector for their main source of animal protein. In many parts of the world small-scale fishing also provides an important means of income generation for the rural poor, including those that only fish occasionally and are not officially recognized as fishers.

Within the context of the Millennium Development Goals (MDGs), improving the productivity of the natural resource base on which fishers depend, along with pro-poor

¹ Defined as those operating from shore or from small fishing vessels in coastal or inland waters.

policies and governance will result in direct benefits in terms of eradicating extreme poverty and hunger (MDG Goal 1). Improving the income of poor fishers will also contribute to achieving universal primary education (MDG Goal 2). In many poor communities, fishing can provide one of the few sources of cash income and when this increases families are more likely to be able to educate their children. The goals to reduce child mortality and improve maternal health (MDG Goals 4 and 5) can also be promoted by improving fisheries productivity. Fish significantly improves the nutritional status of young children, pregnant and lactating women. It can complement the carbohydrate-based diets (e.g. rice) of the poor, providing an easily digestible source of protein, which is important for growth and also essential vitamins (e.g. Vitamins A, B1, B2 and D) and minerals (e.g. iron, calcium). Fishing accounts for some of the greatest impacts on aquatic ecosystems, particularly coastal and riverine ecosystems, and fisheries management is therefore key to ensuring environmental sustainability (MDG Goal 7).

The importance of the small-scale fisheries sector to food security and poverty alleviation was recognized by the 25th Session of the FAO Committee on Fisheries. Specifically, COFI members recognized that there was a need for better understanding of the nature, extent, and causes of vulnerability and poverty among small-scale fishers and to improve the information base and monitoring approaches for determining the contribution of the sector to the alleviation of these conditions. The research agenda proposed at COFI 25 marks an important re-emphasis towards effective development strategies for SSF. In response, FAO has developed *FAO Technical Guidelines for Responsible Fisheries (No. 10) on Enhancing the Contribution of Small-Scale Fisheries to Poverty Alleviation and Food Security*. A draft of this document was made available for review and comments at the 26th Session of COFI in March 2005.

The need for new approaches to small-scale fisheries assessment and management

Small scale fisheries in the developing world are diverse, numerous, geographically dispersed, vulnerable to forces external to the sector, and in crisis. Historically, development interventions have sought to reduce poverty through accelerated economic growth, improvements in technology and infrastructure, and market-led economic policy reform. The limited results of these interventions, however, has led to a re-examination of the causes of poverty, the recognition of the significance of vulnerability and the recognition of the need for new strategies for poverty reduction. There is increasing recognition that establishing appropriate pro-poor governance and institutions for fisheries management are central to maximizing the contribution of fisheries to poverty alleviation and food security. Such strategies may include rights-based approaches, co-management regimes and fishing capacity reduction.

Not least of the challenges facing SSF can be the indifference or neglect of governments. In a recent global review of 281 national policy papers, including 50 poverty reduction strategy papers, it was found in only a small number of countries that fishing communities were included among the target groups and that the fisheries sector was accorded an explicit role in poverty reduction and food security. A FAO review of national strategies in West African countries showed that small-scale fisheries were rarely or poorly taken into account, even though they produce over one million tonnes in annual catch and provide livelihoods for over seven million fishers in the region. Improved information on SSF alone will not be sufficient to reverse this situation. Fundamental changes in governance and institutional arrangements

are also required. At the same time, it is recognised that improved information can help to encourage such changes. In the absence of improved information bases and supportive governance and institutional measures, policies, plans and management instruments are likely to be ineffective or, worse, detrimental to, the SSF sub-sector.

It is easy to agree that we need to accommodate uncertainty, complexity and dynamic change not only in the aquatic resources but also in the social institutions that define fisheries – the real issue is how to do it. The challenge is both acute and pressing for SSF in the developing world. Not only is there a bewildering diversity of (ever-changing) small-scale fisheries with differing ecological attributes prosecuted in divergent social and institutional settings, but the range of legitimate perspectives on the problem is wide. It is this latter attribute, and the related issues of values, equity, and social justice that come with these perspectives, that make the assessment and management of small-scale fisheries particularly challenging.

It is implausible to promise sustainable SSF in the developing world within the research and management paradigm, based on single-species biological/economic yield maximization, that has dominated fisheries since the 1950s. The last decade or so has seen fisheries research and management broaden considerably in the search for better ways of doing things; these developments have seen new approaches, concepts and methods, such as the precautionary principle, ecosystem approaches to management, the sustainable livelihoods approach, co-management, adaptive management, and so forth. Important international instruments and codes have been promoted to normalize their use. Nevertheless, for all this endeavour there remains no unifying set of principles nor agreed structure for attacking the particular problem of SSF in the developing world. Further, the more biological approaches are sometimes set as alternatives or in opposition to the ‘people centred’ approaches. This is unhelpful as, trivially, integration of principles and concepts from both streams of enquiry are required.

The broader literature on the management of natural resources in the developing world is moving fast and on multiple fronts. This literature comes from many academic disciplines, but increasingly is blending ecology, anthropology, sociology, and economics. It may be argued that the fisheries literature has not absorbed many of these developments and there remains no widely accepted framework or suite of methods to guide practitioners in conceptualizing and actually doing the business of assessing and managing small-scale fisheries. Researchers and managers alike are faced with an unrewarding clutter of theories, methods, and case studies. Similar confusion is presented to donors and national policy makers contemplating investments in the fisheries sector.

Clearly, given the diversity of ecological and social contexts, a prescriptive framework would be doomed to failure. Nevertheless, some unifying architecture is necessary if we are to proceed beyond the current idiosyncratic development and promotion of methods that work under particular combinations of circumstances and influences. We suggest a broad framework is not only possible, but also necessary to provide a context to build on hard-won lessons, highlight bottlenecks to development, and as a basis for developing a practical guide to practitioners. The beginnings of such a framework began to emerge from a workshop convened by The WorldFish Center and FAO in September 2005. Existing gaps and weaknesses in methods and approaches were identified, and a roadmap was developed to navigate the complexities of what is an inherently complex multidisciplinary problem.

Below we venture the beginnings of a framework in order to structure the work proposed (Figure 1). In doing so we recognize that this is but one conceptualization of many that could capture the same principles. This framework recognizes five main elements in assessment and management: (1) a diagnosis of the current status, threats, and opportunities of the fishery system; (2) a management arena in which the stakeholders (including government and researchers) negotiate rules and agree upon indicators of performance; (3) management itself, which in all cases will be structured to learn from experience (i.e. be adaptive), and in all cases will be participatory, and in many cases, but not all, be shared with government; (4) the ‘external environment’ – the threats and influences that impinge on the fishery from outside the domain of the management actors (e.g. climate change, damming rivers, pollution, market distortions, and broader governance and policy settings) and which will influence the diagnosis of the ‘limits of the possible’ within the domain of the fishery (and which are therefore where emphasis should be placed in management); and (5) the outcomes – the social and economic benefits that flow from the fishery, as well as the ecosystem goods and services that are maintained and/or degraded (in sum, the configuration of the socio-ecological system). The framework draws principles and concepts from the leading approaches to assessment and management but is not, necessarily, dependent on any except adaptive learning and participation.

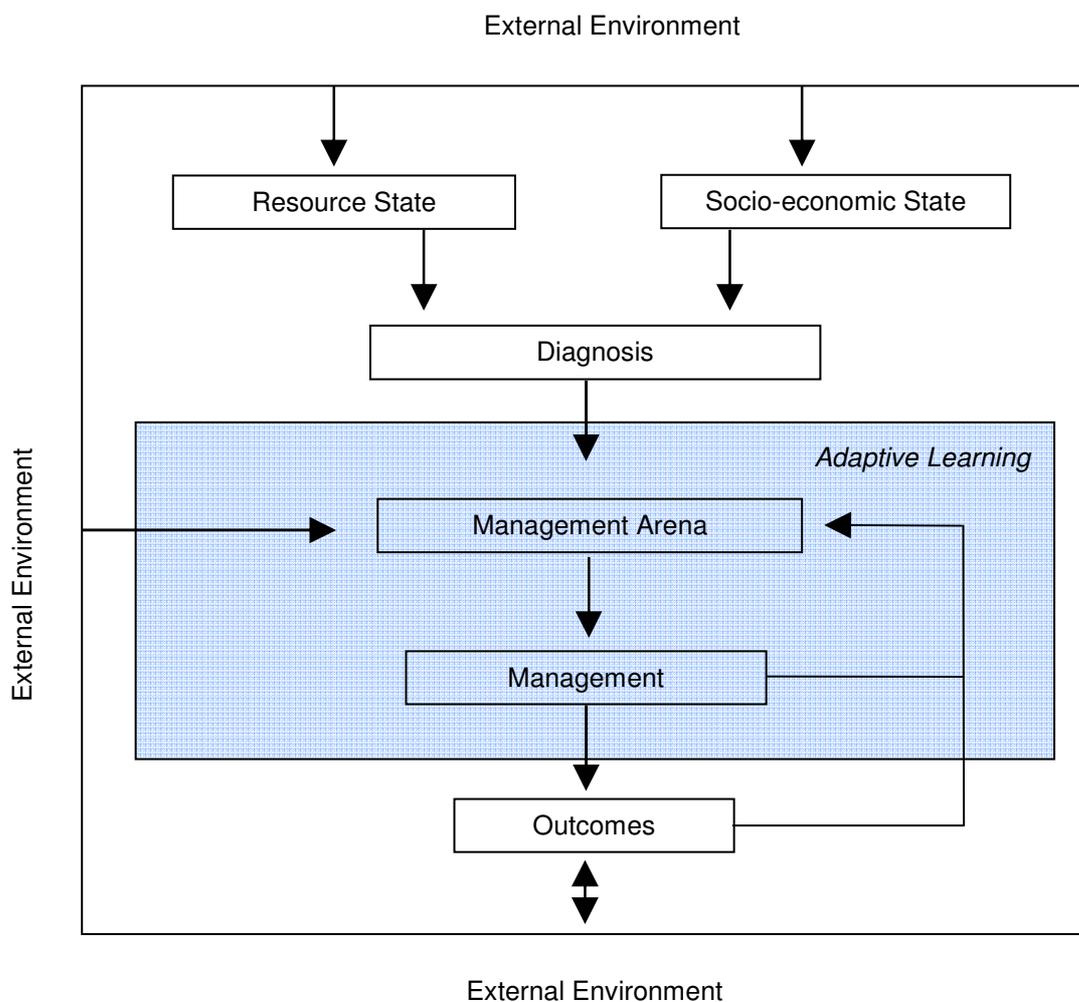


Figure 1: A general framework for the assessment and management of SSF.

The diversity of SSF may be accommodated within this framework by placing emphasis on different elements of the framework. For example, in some inland fisheries, biophysical processes external to the fishery (e.g. water levels or flows) are the dominant influence so emphasis should be placed on mitigating impacts on fishers and ecosystems to reduce vulnerability and increase adaptive capacity. Conversely, in coastal fisheries for sedentary invertebrates in which social institutions may be strong and external influences relatively weak, fishing may be the dominant influence and such a system would be best placed to put emphasis on the adaptive learning cycle.

Project description

The project will last four years and will comprise a mix of research and non-research activities. Using the framework above as a starting-point, the project may be divided into four work packages that require different skills and institutional involvement: (1) Further development of the framework, and within it methods and indicators of management performance; (2) Synthesis and awareness raising, (3) Field Testing / Case studies in a range of countries to validate and refine the framework and indicators; and (4) capacity building in assessment and management of SSF in developing countries. These work packages are briefly described below:

(1) Framework and methods: In this first work package, the framework outlined above will be further developed to organize lessons, and guide method development. To be useful in such a task the framework must be able to accommodate the full diversity of SSF, and to be wedded to as few theoretical and regulatory practices as possible. Each of the five elements introduced above contains researchable questions that need to be answered before a robust framework can be tested in case studies. In addition, as a related, but separate issue we need to develop indicators of sustainability that are appropriate to the classically data sparse, institutionally weak environment of SSF.

(2) Synthesis and awareness raising: The second phase recognizes that achieving the outcomes sought from the project will require a mix of research, non-research activities in which research agencies can play a brokering or convening role, and activities such as management and institutionalization. The synthesis of existing lessons will concentrate on better using the remarkable diversity of SSF to generalize lessons and identify possible future directions. There can presently be no meta-analysis of successes and failures of methods and their application because there is no coherent body of theory that links the various pieces of the jigsaw. Institutional analysis, adaptive management, ecosystem theory, and so forth all sit largely independent of each other. Just as importantly, concepts of resilience, vulnerability, and hysteresis sit uncomfortably together. In order to begin to make connections between these various concepts, approaches, and tools we need to develop a typology of SSF that will allow us to ask larger and more structured questions about these fisheries. What are the major correlates of success? Are there, for example, particular combinations of fishery, biological, social, and economic attributes that predispose certain forms of management to success? Non-research activities such as institutionalization will require both international organizations, particularly FAO, and National management agencies. To this end, the project will be implemented through a partnership of international organizations (e.g. FAO, The WorldFish Center, and the World Bank), national research partners in developing countries, along with a range of research expertise from Advanced Research Institutes.

(3) Field Testing/Case studies: In the third phase of the project, the framework and methods identified as most appropriate will be tested, using case studies within specific guidelines developed by the project. The case studies will directly engage partners from developing countries in methods development, ensuring that they are applicable and acceptable. The theoretical and methodological material will then be refined and published. The project is global in scope but will focus, particularly for the case studies, on countries where small-scale fisheries play a significant role, particularly for the poorer sections of the community. Case study and capacity building activities initially will involve four regions: South and Southeast Asia; Sub-Saharan Africa; West Africa; and Latin America and the Caribbean.² Work across these different regions will help ensure that the methods developed can be applied and adapted to a wide range of local contexts.

(4) Capacity Building: This package will specifically address capacity building in integrated assessment and management of SSF in developing countries, through (i) building a constituency or network of agencies and institutions in the developing world to further develop, test, and ultimately apply new approaches and methods, and (ii) development and dissemination of training material/guidelines and regional training courses. Capacity building will take place at different levels (regional and national) and will involve different stakeholders (Government, Community, RFOs, NGOs, and Research Institutes) depending on the results of the project and regional/national needs. The exact extent will be formulated in the second work package of the project in consultation with the different stakeholders involved.

The partners of the project will interact through a web-based knowledge network, supplemented by CD-ROM and other media. The outputs of the project (methods, manuals, software, case studies, etc.) will be disseminated through a targeted information, communication and education campaign, as well as CD-ROMs, and other media to ensure the outreach in poorly connected areas as well as on-the-job coaching and training in the course of the case studies (including through the use of self-training packages). The audience for the major outputs, particularly the framework and methods developed, will be broad and include research and academic institutions, government fisheries agencies, regional fisheries management organizations and civil society groups that support SSF.

² The Research Agenda for Small-Scale Fisheries developed by the FAO Advisory Committee on Fisheries Research (ACFR) will be used as the basis for the selection of case studies. In West Africa the project will build on the experience from the Sustainable Fisheries Livelihoods Programme.

Outputs and Activities (dates appropriate at time of writing and assume a July 2006 start)

WORK PACKAGE 1: FRAMEWORK AND METHODS FOR ASSESSMENT AND MANAGEMENT OF SMALL-SCALE FISHERIES.

Output 1.1 Creation of the multidisciplinary team of experts, with experience in small-scale fisheries and rural development and in the application of non-conventional approaches to fisheries assessments, to lead framework development. Completion September 2006;

Output 1.2 Development of a framework for the interdisciplinary assessment of SSF, based on available theories, concepts, and approaches developed for fisheries and other fields of rural development research. This work will use the framework outlined above as a starting point and be organized within the four elements of that framework. Completed December 2006;

Output 1.3 Development of a first set of appropriate indicators of sustainable development for SSF in the developing world. Completed March 2007;

Output 1.4 Development of *ex post* impact assessment tools for the analysis of SSF contribution to national and regional economies. Completed December 2007.

WORK PACKAGE 2: SYNTHESIS OF LESSONS LEARNED AND AWARENESS RAISING

Output 2.1 Implement an information system to catalogue the biophysical, social and economic attributes of SSF to organize and reveal aspects of assessment and management that are not presently known. Completed December 2007;

Output 2.2 Based on analysis of this database and on synthesis of available literature, publish a 'lessons learned' summary of SSF assessment and management with guidelines for case studies and further research. Completed December 2007;

Output 2.3 Produce and disseminate policy briefings about the role and contribution of small scale fisheries to food security and poverty reduction. Completed July 2007;

Output 2.4 Profile raising and awareness building. Completed July 2008.

WORK PACKAGE 3: FIELD TESTING/CASE STUDIES

- Output 3.1* Call for proposals to identify candidate fisheries and recruit scientists in developing countries to participate with case studies to the project. Completed December 2008;
- Output 3.2* Technical/planning workshops with the selected scientists to establish the process for the case studies, to identify the necessary training needs, and to establish a strategy for exchanging information and monitoring the development of the case studies. Completed July 2009;
- Output 3.3* Completion and documentation of the results of the application of the framework and methods, in case studies from a range of geographical settings and fisheries types, aiming at the analysis of the weaknesses and strengths of the proposed methods. Completed December 2009;
- Output 3.4* Foster further development and/or improvement of methods and tools, including analytical software, information systems and training packages, to address the research needs identified during the expert consultation and case studies. Completed December 2009.

WORK PACKAGE 4: CAPACITY BUILDING IN DEVELOPING COUNTRIES

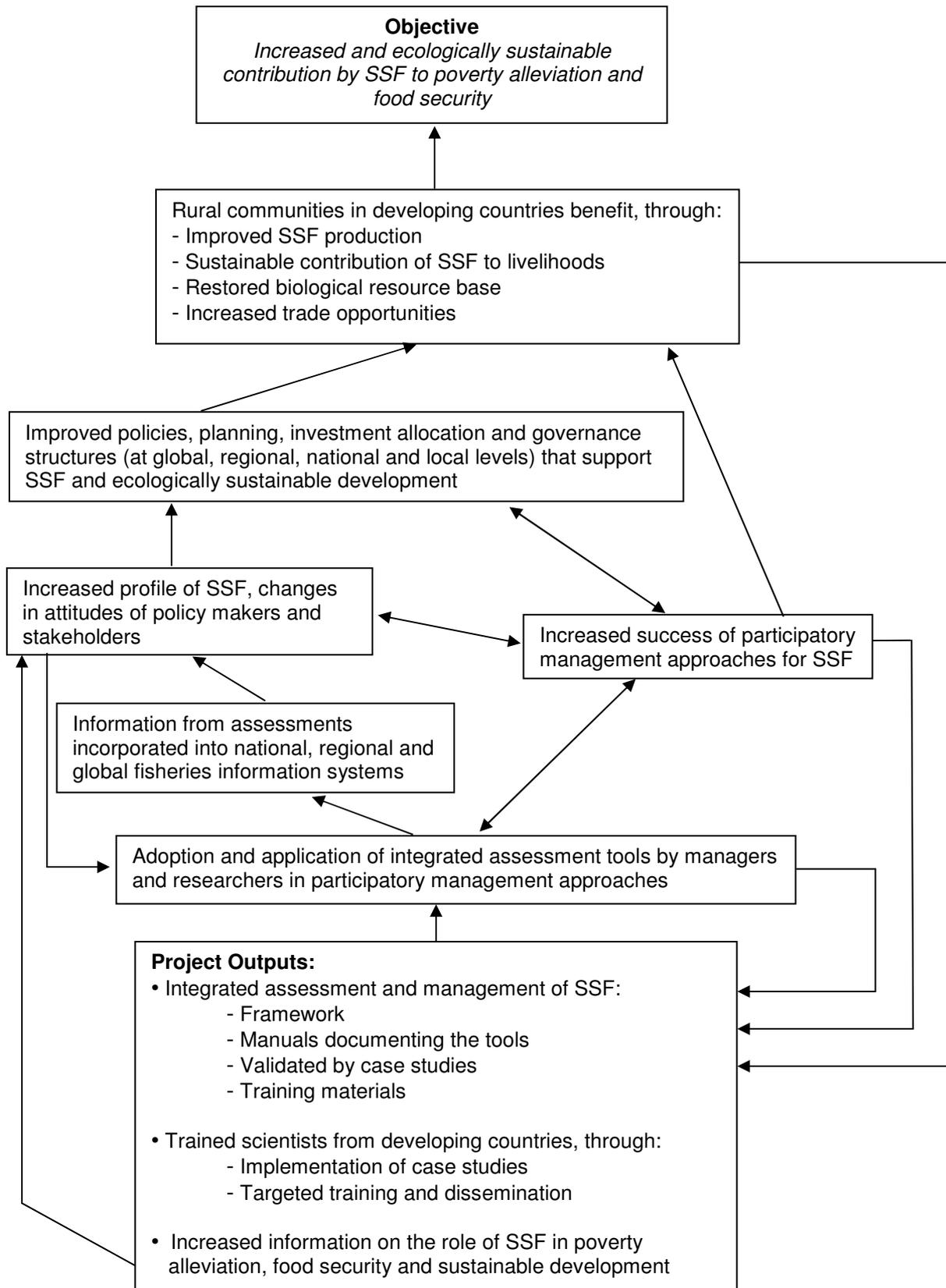
- Output 4.1* Build a network of NARs and RFOs to partner in the development, testing and application of new assessment and management techniques. Completed December 2007;
- Output 4.2* Produce and disseminate a reference guide for the interdisciplinary assessment and management of small-scale fisheries, incorporating the review of theories, concepts and approaches and the results from the case studies. Completed July 2010;
- Output 4.3* Promote technical and institutional capacity building for the interdisciplinary assessments of small-scale fisheries through training courses, facilitation of access to tools and information sources, and fostering the exchange of expertise and the establishment of international cooperation programs among developing countries. Completed July 2010.

Project Outcomes and impact

Given the fact that about 1 billion people rely on SSF for their main source of animal protein, and at least 23 million small-scale fishers (and their households) earn < US\$ 1 per day, even modest improvements in the resilience of SSF will have enormous benefits to the lives of some of the world's most vulnerable people. The focus for delivery of this impact is poor rural communities that significantly depend on fisheries for food, livelihoods and income. The outcomes of this will be wide-ranging and significant, as depicted in Figure 2. The logic can be summarised as follows: by increasing the understanding, profile and way to

measure/estimate the contribution of small-scale fisheries to food security and poverty alleviation, policy makers and managers will become more aware of the importance of this sector. This increased awareness will, in turn, lead to the creation of more effective policies and management decisions that more appropriately reflect the importance of small-scale fisheries and the role they can play in rural development and poverty reduction. This policy development will be enabled by the increased capacity in developing countries to provide the information and assessments necessary for management and also by the growing knowledge base on small-scale fisheries.

Figure 2: Project impact pathway from outputs to the overall objective.



Preliminary Budget

Output	US	Percentage of Total
Work package 1: framework for interdisciplinary assessment of small-scale fisheries.	950,000	23%
Work package 2: synthesis of lessons learnt and awareness raising	900,000	22%
Work package 3: field testing/case studies in developing countries	1,200,000	30%
Work package 4: capacity building and institutionalization	1,000,000	27%
TOTAL	4,050,000	100%