

Towards integrated assessment and advice in small-scale fisheries

Principles and processes



Cover photographs:

Main photo: Fishers in the Sundarbans of Bangladesh; courtesy of G. de Graaf, FAO FishCode STF Project.

Left inset: A small-scale fisheries landing site in Kayar, Senegal; courtesy of G. de Graaf, FAO FishCode STF Project.

Right inset: Consultation of fishers at West Point, Monrovia, Liberia, by officials from the Bureau of National Fisheries; courtesy of F. Marttin, FAO FishCode STF Project.

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Towards integrated assessment and advice in small-scale fisheries

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Principles and processes

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Abstract

The document presents the principles and processes for integrated assessment and advice in small-scale fisheries. The first chapter discusses failures of conventional assessment and management approaches. Chapter 2 presents the conceptual origins and principles of integrated assessment of small-scale fisheries. The framework is then introduced and places the assessment within the broader planning and management cycle. The final chapter discusses the implementation of the IAA framework.

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Preparation of this document

Conventional assessment frameworks do not provide an adequate basis for informed management decisions and development planning of the small-scale fisheries (SSF) subsector. Normative management frameworks and approaches have been developed as an evolution of conventional fisheries management, such as the FAO Code of Conduct for Responsible Fisheries and the ecosystem approach to fisheries (EAF). Yet, the assessment frameworks required to operationalize these alternative management approaches have not been fully developed, at least for small-scale fisheries.

The integrated assessment and advisory (IAA) framework presented in this publication begins to address this need. The document presents the conceptual basis of the IAA process, introduces the framework and situates the assessment within the broader planning and management cycle. The IAA framework presented here results from the synergistic efforts of the Food and Agriculture Organization of the United Nations (FAO) and the WorldFish Center (WFC), with collaboration from individuals leading both research and practical assessment and management programmes related to SSF. The document results from the May 2007 working group. A “zero draft” was based on the contributions of all participants. The compilation of the outputs and drafting of this report were led by Serge M. Garcia (FAO) and Edward H. Allison (WFC). Recognizing the complexity, multiple potential approaches and a diversity of perspectives, feedback and empirical testing of this framework by the many experienced researchers and practitioners interested and working in SSF are invited.

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Foreword

When the accumulation of perceived failures significantly exceeds the perceived utility of management, the legitimacy and conceptual coherence of that management institution are weakened to the point where they are vulnerable to challenge and open to fundamental change.

(Finlayson and McCay, 2000)

Conventional fisheries assessment does not provide an adequate basis for informed management decisions and development planning in the small-scale subsector. Current assessment methods and procedures have failed to maintain legitimacy as they lack conceptual coherence and often neglect to incorporate important aspects of the fishery system.

This document introduces an assessment and advisory framework for small-scale fisheries (SSF) that it is proposed will inform policy and management more effectively. The framework builds on approaches that have evolved over the last thirty years. It emphasizes participation of a diversity of stakeholders, incorporates elements of the fishery system beyond the catching process, acknowledges the need to understand the social and economic system as well as the ecological one and aims to support an adaptive style of management. The conceptual underpinning of the new framework is that of building resilience of fishery social-ecological systems.

The framework emerges from a stream of activities in FAO and the WorldFish Center focusing on SSF, their specific characteristics, their various forms of management and their evolution in a rapidly changing global and fishery environment. It stems from the realization that, overall, SSF have been neglected both by fisheries management and in national development planning. As a result, these fisheries are characterized by overexploitation of coastal and inland fishery resources and neglect or marginalization of fishing communities' needs for social, judicial and financial services. This neglect arises, at least in part, from an under-estimation and consequent under-appreciation of the economic value and contribution of SSF to broader societal well-being.

The need for a more integrated assessment and advisory (IAA) framework was first identified by the fourth session of the FAO Advisory Committee on Fishery Research (ACFR) in 2002) and its 2003 Working Party on Small-scale Fisheries. The importance of the SSF sector to food security and poverty alleviation has also been recognized explicitly in the last three sessions of the FAO Committee on Fisheries (COFI) in 2003, 2005 and 2007. Specifically, COFI members recognized that there was a need for a better understanding of the nature, extent and causes of vulnerability and poverty among small-scale fishworkers 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, following the ACFR proposals, marked an important re-emphasis within FAO member countries towards effective governance and development strategies for SSF. In response, guidelines on enhancing the contribution of small-scale fisheries to poverty alleviation and food security were developed (FAO, 2007).

Agreement to develop an integrated assessment framework, presented here, within both FAO and WorldFish Center work programmes, originated from an informal brainstorming session at the WorldFish Center, Penang, Malaysia (2004). A more formal workshop was organized jointly by the WorldFish Center and FAO through the FishCode project on Status and Trends in Capture Fisheries (FAO FishCode STF)

in September 2005 in Rome. This involved a larger community of scientists from developed and developing countries, with the view to elaborating a project concept. The workshop identified existing gaps and weaknesses in methods, identified some potential approaches and developed a roadmap to examine ways of dealing efficiently with what is an inherently complex, multidimensional and multidisciplinary problem. The project concept note outlined the various phases of the development of the framework, the distribution of roles among partners and the likely outcomes. Commitment to the development of the IAA was strengthened by the WorldFish Center's focus on capture fisheries and the building of resilient SSF to enhance their contribution to poverty reduction (WorldFish Center Medium Term Plan, 2006–2009). The FAO FishCode STF project followed up on the recommendations of the workshop, raised funds and organized a small working group in May 2007.

This document results from the May 2007 working group. A “zero draft” was based on the contribution of all participants. The compilation of the outputs and drafting of this report were led by Serge M. Garcia (FAO) and Edward H. Allison (WorldFish Center). Recognizing the complexity, multiple potential approaches and a diversity of perspectives, we invite feedback from and empirical testing of this framework by the many experienced researchers and practitioners interested and working in SSF.

The IAA framework presented here results, therefore, from the synergistic efforts of FAO and the WorldFish Center, with collaboration from individuals leading both research and practical assessment and management programmes related to SSF. Together, we have endeavoured to articulate and integrate multiple potential approaches and methods, which we propose are sufficiently generic and versatile to be widely applicable, yet specific enough to be effective in problem-solving in complex situations. The IAA incorporates a wide range of contemporary thinking in natural resource management, fisheries management and ecosystem governance in a conceptually coherent manner and, therefore, aims to garner legitimacy as an effective alternative to conventional assessment and management of SSF, so instigating the required “fundamental change”.

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Abbreviations

ACFR	FAO Advisory Committee on Fisheries Research
CBD	Convention on Biological Diversity
CCA	Causal chain analysis
CCRF	FAO Code of Conduct for Responsible Fisheries
CGIAR	Consultative Group on International Agricultural Research
COFI	FAO Committee on Fisheries
EAF	Ecosystem approach to fisheries
EIA	Environmental impact assessment
FAO	Food and Agriculture Organization of the United Nations
FAO FishCode STF	FAO FishCode project on Status and Trends in Capture Fisheries
FAO SFLP	FAO Sustainable Fisheries Livelihoods Programme
GDP	Gross domestic product
GIS	Geographical Information System
HACCP	Hazard Analysis and Critical Control Point
IAA	Integrated assessment and advisory
ICAD	Integrated conservation and development
ICES	International Council for the Exploration of the Sea
IDRC	International Development Research Centre
ILO	International Labour Organization
ISO	International Organization for Standardization
LEK	Local ecological knowledge
LRP	Limit reference point
M&E	Monitoring and evaluation
MPA	Marine protected area
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
NGO	Non-governmental organization
OMP	Operational management procedures
PRA	Participatory rural appraisal
RRA	Rapid rural appraisal
SD	Sustainable development
SSF	Small-scale fisheries
TAC	Total allowable catch
TEK	Traditional ecological knowledge
TEV	Total economic value
ThRP	Threshold reference point

TRP	Target reference point
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
WCED	World Commission on Environment and Development
WFC	WorldFish Center
WSSD	World Summit on Sustainable Development

Executive summary

Conventional assessment frameworks do not provide an adequate basis for informed management decisions and development planning of the small-scale fisheries (SSF) subsector. Normative management frameworks and approaches have been developed as an evolution of conventional fisheries management, such as the FAO Code of Conduct for Responsible Fisheries (1995) and the ecosystem approach to fisheries (EAF). Yet, the assessment frameworks required to operationalize these alternative management approaches have not been fully developed, at least for small-scale fisheries. The integrated assessment and advisory (IAA) framework presented here begins to address this need. This document presents the conceptual basis of the IAA process, introduces the framework and places the assessment within the broader planning and management cycle.

CONCEPTUAL ORIGINS OF THE FRAMEWORK

The IAA process is based on over thirty years of thinking in fisheries management, natural resource management, ecological governance and alternative development. Principles of participation, integration, transparency, versatility and adaptability underlie the framework. At the same time, insight from adaptive dynamics ecology, institutional analysis, rights-based approaches, rural development and macroeconomics inform its structure. The diverse conceptual origins of the framework mean that it more fully addresses the inadequacies of conventional assessments and other relatively limited frameworks, although, importantly, these may continue to play a role within the structures of this integrated process. In particular, the IAA process emphasizes and provides tools for understanding the complexity and interlinkages that characterize SSF as social-ecological systems, as well as highlighting the vulnerability of SSF to external drivers and the contribution of SSF to multidimensional local, national and global lifestyles. The historical neglect of these complexities is apparent in widely acknowledged management failures and fisheries collapses. SSF are experiencing problems of economic and social displacement and marginalization, resource depletion, poverty and food insecurity resulting in widespread economic, social and cultural stress. The IAA aims to provide a mechanism to better inform more effective and legitimate management of these fisheries within the context of uncertainty and global change. The IAA will also improve our understanding of SSF and the variety of issues that affect them.

INTEGRATED ASSESSMENT AND ADVISORY PROCESS

The IAA framework is intended for those who need assessment for decision-making for SSF management, including policy-makers, managers, fishing communities, industry representatives and non-governmental organizations (NGOs) or those who supply such assessments, including academics, government scientists, consultants, industry analysts and investors and donor agencies. It is demand-driven, in response to both strategic and operational planning and/or problem resolution.

It is also process-oriented. The logical steps through the IAA process are presented, moving from an initial scoping exercise, through comprehensive assessment and formulation of advice, to decision-making for management. A monitoring and evaluation process is a fundamental component. Although these are presented as discrete steps or processes, continuous feedbacks characterize the entire process. The most important feature of the IAA framework is the close linkage between the diagnostic process (scoping and assessment) and the advisory and decision-making process. This is characteristic of an adaptive management approach that responds

flexibly to external drivers, opportunities and constraints – be they institutional political, climatic, ecological or economic.

Assessment and advisory processes are not distinct, mutually-exclusive activities, and it is expected that IAA activities at multiple spatial and geographical scales, on different and overlapping issues and within strategic and operational management arenas, will occur simultaneously.

Finally, the IAA framework is non-prescriptive. It combines historical, comparative and experimental approaches. It uses qualitative and quantitative methods and is fundamentally concerned with integrative modes of enquiry and multiple sources of evidence. It is about building integrated knowledge and applying this knowledge. This is essential for assessments within SSF (particularly in developing countries) where the resources and capacity available and the cost of the assessment relative to the fishery will differ among and within nations and the SSF subsector.

THE PLANNING AND MANAGEMENT CONTEXT

The IAA process does not deal directly with policy and management. It does position the assessment process within the broader planning and management arena to show the links between the assessment phases and the decision-making process for management. The framework intends to be applicable for both long-term policy review or development planning and short-to-medium-term management agendas. It is also appropriate for recurrent, routine management, crisis or issue-based management and conflict resolution.

IMPLEMENTATION

This document presents the IAA framework and is the first step in a process of evolution through broader peer review, new contributions and empirical testing. This stage of IAA development is an important step in a continuing collaborative effort that will lead to a legitimate conceptual framework for integration of assessment, advice and decision-making in SSF. The next step is to present a range of approaches, methodologies and tools to choose from, depending on the particular context in which the IAA is implemented. Indirect outcomes should include a better awareness of SSF and their contribution to food security and poverty alleviation, a clearer vision of the role and future for resilient, sustainable and legitimate SSF, the emergence of multidisciplinary teams and collaborative and participatory relationships among different stakeholders and an interdisciplinary knowledge base on SSF, including a large number of case studies and best practices.

In practice, simplifications of the ideal IAA process might be unavoidable but it will be important to maintain its spirit of integration. Pilot testing of the IAA process will be fundamentally important. Up-scaling an IAA from a local project to the entire sector will be challenging, but rapidly reaching efficiency in the process will be essential to convince decision-makers and stakeholders of the value of the system.

Once the IAA framework is established, a number of operational issues will arise, such as: (i) coping with the chronic deficit of formal scientific data for SSF, compensating as much as possible with local knowledge; (ii) integrating assessment and advice across time, space and institutional scales; (iii) institutionalizing adaptive social learning, ensuring fairness and sustainability; (iv) determining and using indicators in the assessment as well as the monitoring and evaluation (M&E) processes; (v) ensuring rapid responses to demands despite the added institutional costs of integration and participation; (vi) optimizing participation at a point where the costs do not outweigh the benefits; (vii) progressive capacity building through training, social learning and development of the collaboration networks; (viii) establishing an auditing system for the IAA process to maintain checks and balances; (ix) developing the background research needed on socio economic and institutional issues but also on resources; and (x) finding the right level of complexity in the assessments and in the administration of the sector in order to deal with the complexity of SSF.