

EAFToolbox

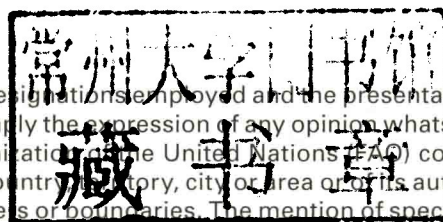
The ecosystem approach to fisheries





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Preparation of the document

The basic principles for developing the toolbox were first identified and discussed at the Workshop on a Toolbox for the Ecosystem Approach to Fisheries (EAF), held in Rome, Italy, 26-29 February 2008 (FAO 2009). In developing the toolbox, attention has been placed on assisting users to understand and move through each of the steps for implementing EAF, and assist them to choose tools appropriate for their situation.

The EAF Toolbox is aimed at national and local fisheries management authorities, including fishery managers, scientists and stakeholders looking for practical solutions they can apply given their circumstances and resources. By ensuring situations with low capacity are covered adequately, it is hoped that the toolbox will be seen as useful by all individuals, groups and sectors interested in the development of improved fisheries management systems to better generate positive community outcomes in each location.

This document represents a subset of the web-based version www.fao.org/fishery/eaf-net, the development of which has been completed with the input of a number of people. The main drafting team for the web pages and tool fact sheets included Rick Fletcher (Department of Fisheries Western Australia, Fisheries Research and Development Corporation and Visiting Scientist FAO), Gabriella Bianchi (FAO), Robin Mahon and Patrick McConney (CERMES, Barbados), Silje Rem (Ministry of Fisheries, Norway) and Serge Garcia. Final editing and revision of this document were undertaken by Marcelo Vasconcellos and Claire Attwood.

Contents

Page



What is EAF?	3
Critical elements of EAF	4
The main EAF management planning steps	5
Procedure, pathway and timeline for EAF planning	6
About the EAF Toolbox	7
Tool selection criteria	8

Steps and Activities

Step 1 - Initiation and scope	9
Activity 1.1 Initial process planning and stakeholder support	10
Activity 1.2 Defining the fishery, societal values and high level objectives	15
Activity 1.3 Finalise the scoping and background document	18
Step 2 - Identification of assets, issues and their priority	20
Activity 2.1 Asset and issue identification	21
Activity 2.2 Issue prioritisation and risk assessment	24
Step 3 - Development of management systems	28
Activity 3.1 Determine operational objectives	29
Activity 3.2 Indicator and performance measure selection	31
Activity 3.3 Management option evaluation and selection	34
Step 4 - Implementation, monitoring and performance review	37
Activity 4.1 Develop an operational plan and monitor its progress	38
Activity 4.2 Formalization of the Management Plan	42
Activity 4.3 Review performance of the management system	44
Activity 4.4 Reporting, communication and auditing of performance	46

EAF planning and implementation tools

Consultation tools	49
Stakeholder workshops	51
Questionnaires	55
Facilitation – online descriptions	57
Conflict management, negotiation and consensus building	60
Description for completing an EAF Baseline Report	63
EAF roadmap template	66
Stakeholder analysis	69

Contents – *continued*

Page

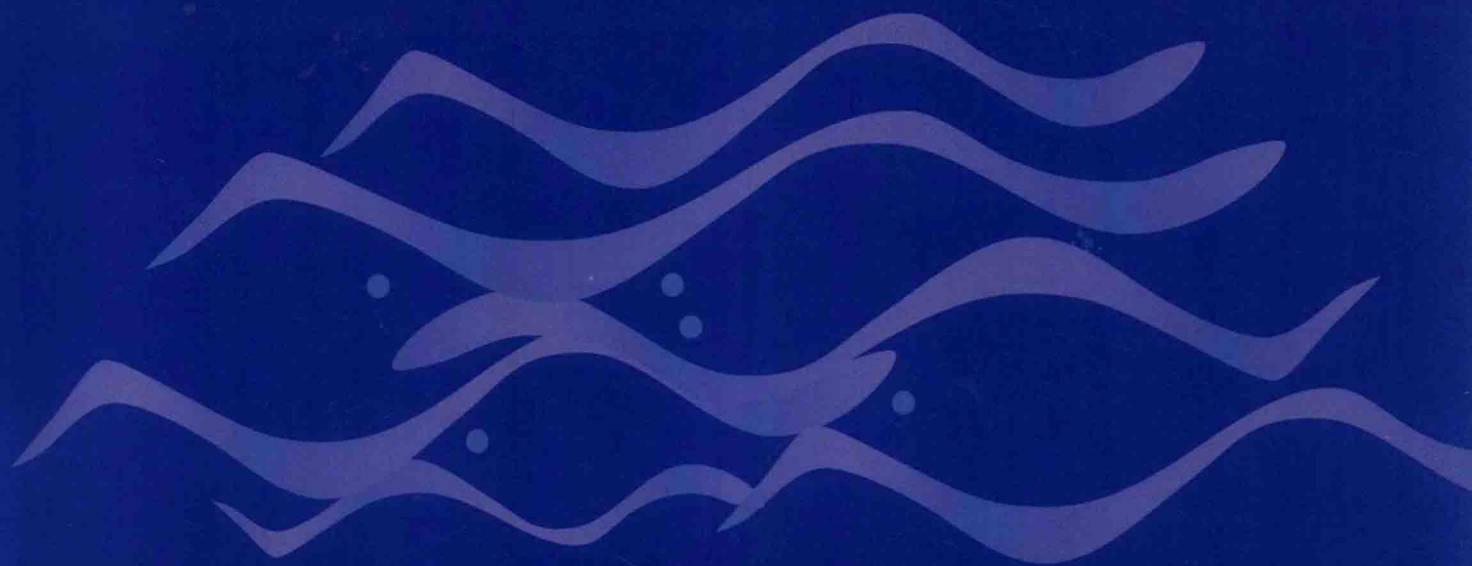
Institutional analysis	73
SWOT analysis	76
Cost-benefit analysis	80
Participatory Rapid Community Assessment (PRCA)	85
Visioning exercises	88
Participatory sketch, scale and photo mapping	90
Social and economic assessment methods	91
Quantitative stock assessment methods	99
GIS based tools for data synthesis and analysis	101
EAF component trees	102
EAF component lists	109
Asset / objective – impact / threat matrix	113
Non formal risk categories (preliminary hazard analysis)	117
Qualitative risk analysis (Consequence x Likelihood)	120
Quantitative risk analysis	130
Dot based ranking and prioritisation methods (“spending your dollar”)	132
Multi-Criteria Decision Analysis (MCDA) also known as Multi-Objective Decision Analysis (MODA)	134
Examples of operational objectives for use in EAF	137
Reviews and summaries of indicators and performance measures for use in EAF	144
Community based or participatory monitoring and evaluation	151
Harvest strategies and control rules	153
Fishery management measures - manuals and reviews	155
Fisheries enforcement and compliance	158
Management Strategy Evaluation (MSE)	159
Review of quantitative ecosystem models	161
Operational plan template and checklist	163
Examples of best practice management plans	167
Eco-labelling - third party certification	170
List of acronyms	172



What is EAF?

What is EAF?





www.fao.org/fishery/eaf-net

What is EAF?

The Ecosystem Approach to Fisheries (EAF) is a practical way to implement sustainable development principles.

The Ecosystem Approach to Fisheries (EAF) has been adopted by the FAO Committee on Fisheries (COFI) as the appropriate and practical way to fully implement the Code of Conduct for Responsible Fisheries.

EAF is a risk based management planning process that covers the principles of sustainable development including the human and social elements of sustainability, not just the ecological and environmental components.

EAF also covers the human or social elements of sustainability.

There are many different definitions of ecosystem based approaches (e.g. FAO, 2003)¹. All include the need to maintain the ecosystem resources for their sustainable use, while recognising that humans are an integral part of the process. So, while the term EAF can be misinterpreted because this name doesn't include the non-ecological components of sustainability, EAF not only deals with all the ecological consequences of fishing, but it also explicitly deals with the social and economic implications (good and bad) generated by the management and institutional arrangements related to fisheries.

EAF includes conventional fisheries management and doesn't need complete knowledge about the ecosystem.

EAF seeks to improve all fishery management processes by adopting risk management principles that recognize complete knowledge is never available and is not essential to start the process. EAF works by the identification and assessment of all relevant issues and the establishment of participatory processes to help address high priorities effectively and efficiently. It assists with making the best decisions with the information available by using a precautionary (to reflect the risk) and an adaptive approach (to improve knowledge and adjust decisions). Implementing EAF helps to develop comprehensive fishery management systems that seek the sustainable and equitable use of the whole system (ecological and human) to best meet the community's needs and values.



¹ FAO. 2003. *The Ecosystem Approach to Fisheries*. FAO Technical Guidelines for Responsible Fisheries No. 4, Suppl. 2. Rome, FAO. 112 pp. (Available at www.fao.org/docrep/005/y4470e00.htm).

Critical elements of EAF

EAF deals with all the impacts of a fishing sector in relation to its contribution to meeting regional societal values and objectives.

Implementing EAF essentially involves asking some key questions:

- What impacts are the fishing activities having on target and associated species and the broader ecosystem?
- What are the economic/social benefits and costs of fishing and related activities to the sector and society as a whole?
- What management arrangements and measures could be implemented to optimally address the issues affecting the sustainability of a fishery?
- What other activities and drivers beyond the control of fishery management are affecting the fishery's capacity to reach its management objectives?

The answers to these questions can vary greatly depending upon local societal values, livelihoods and ecosystem types.

What may be acceptable in one region may not be in another, because not all communities want the same outcomes from their fisheries.

All management decisions are risk based, even if this is not explicit. The EAF process helps to determine what (if any) management actions are appropriate for each issue given the current level of risk, available knowledge (including stakeholder input) and available resources.

EAF promotes the development of governance systems that match the complexity of the fishery and are aligned with the management agencies' responsibility and capacity to control.

EAF must be seen as an extension of conventional fisheries management, not as a parallel process. It is really just a different way of implementing management that involves a broader set of objectives and a more participative and adaptive process.

The main EAF management planning steps

The EAF identifies and deals with all the positive and negative aspects associated with a fishery. This includes issues with little formal information and even issues generated from non-fishery sources (e.g. pollution, climate). The purpose of the EAF process is to develop and implement an integrated set of management arrangements for a fishery to generate more acceptable, sustainable and beneficial community outcomes.

The EAF planning steps have been specifically developed to apply to the management of fisheries. Interactions between EAF and cross-sectoral, environmental planning (e.g. within Large Marine Ecosystems and Integrated Coastal Zone Management frameworks), are not specifically dealt with here, but the four main steps and even many of the tools will still be relevant to these broader planning processes.

The four main steps in the EAF planning process for fisheries are outlined below.

Step 1 Initiation and scope

Based on government and stakeholder input, generate an agreed and clear definition of the fishery (scale and type) plus a shared understanding of the social, economic and ecological objectives to be achieved.

Step 2 Identification of assets, issues and priorities

Identify all relevant resource "assets", community outcomes and the issues affecting their management (generated either by the fishery or external factors) and determine priorities for direct action to best achieve objectives.

Step 3 Development of management system

Develop a management system to cost-effectively and holistically deal with all high priority issues that includes clear operational objectives and the ability to monitor and assess performance.

Step 4 Implementation, monitoring and performance review

Document the actions required to implement the management system, monitor their completion and evaluate and report on their performance in delivering acceptable community outcomes.

Procedure, pathway and timeline for EAF planning

While the four main steps of EAF can appear to be a linear sequence, starting at step 1 and moving sequentially to the end of step 4, the starting point for a fishery will depend on what triggered the planning process and what has already been achieved. Furthermore, because this is an iterative process, some steps and activities may need to be re-visited as new information or problems arise.

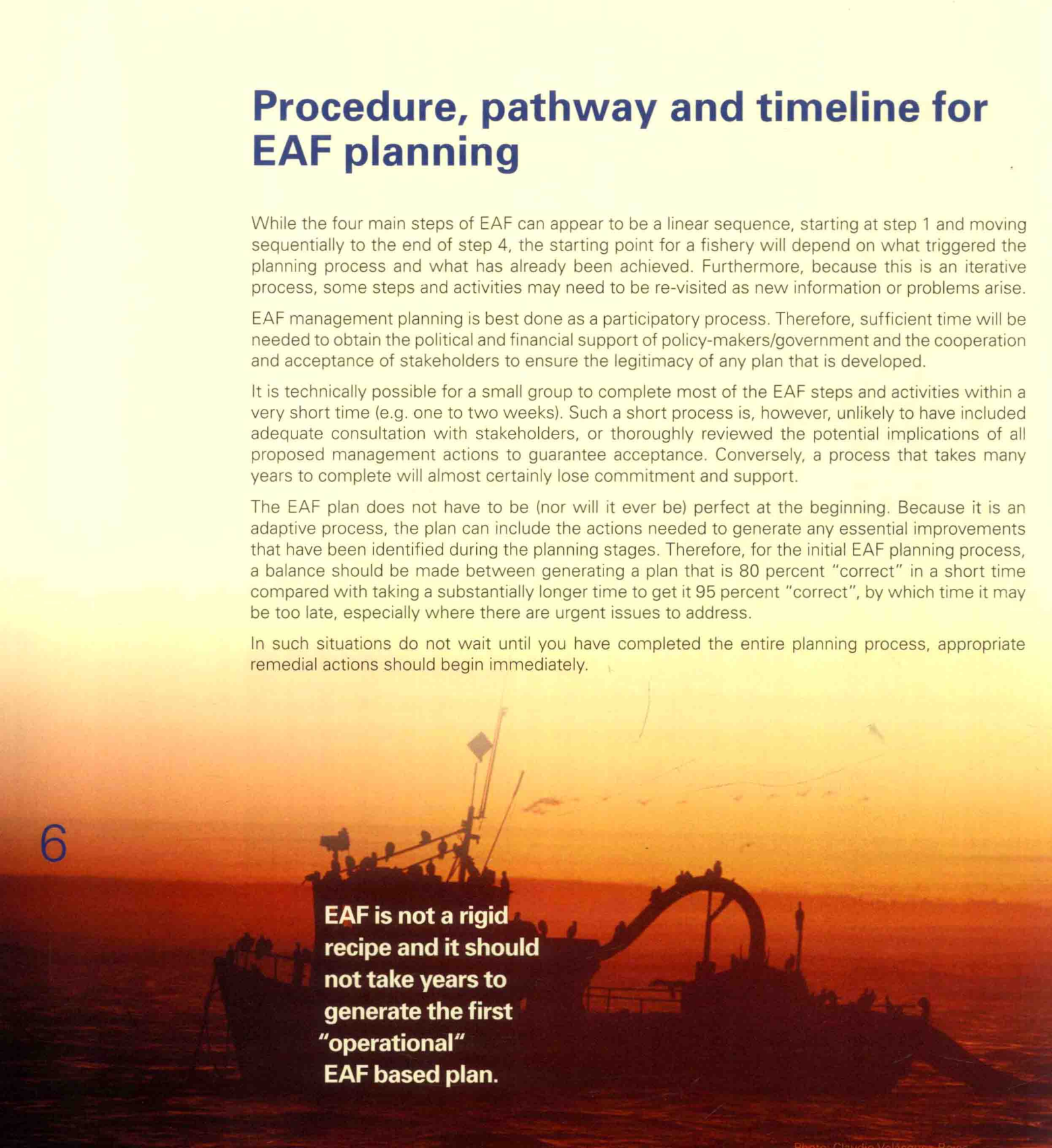
EAF management planning is best done as a participatory process. Therefore, sufficient time will be needed to obtain the political and financial support of policy-makers/government and the cooperation and acceptance of stakeholders to ensure the legitimacy of any plan that is developed.

It is technically possible for a small group to complete most of the EAF steps and activities within a very short time (e.g. one to two weeks). Such a short process is, however, unlikely to have included adequate consultation with stakeholders, or thoroughly reviewed the potential implications of all proposed management actions to guarantee acceptance. Conversely, a process that takes many years to complete will almost certainly lose commitment and support.

The EAF plan does not have to be (nor will it ever be) perfect at the beginning. Because it is an adaptive process, the plan can include the actions needed to generate any essential improvements that have been identified during the planning stages. Therefore, for the initial EAF planning process, a balance should be made between generating a plan that is 80 percent "correct" in a short time compared with taking a substantially longer time to get it 95 percent "correct", by which time it may be too late, especially where there are urgent issues to address.

In such situations do not wait until you have completed the entire planning process, appropriate remedial actions should begin immediately.

6

A silhouette of a fishing boat with a large crane-like structure on its deck, set against a vibrant orange and yellow sunset sky. The boat is on the water, and the overall scene is dark and atmospheric.

**EAF is not a rigid
recipe and it should
not take years to
generate the first
"operational"
EAF based plan.**

About the EAF Toolbox

The basic principles for developing the toolbox were first identified and discussed at the Workshop on a Toolbox for the Ecosystem Approach to Fisheries (EAF), held in Rome, Italy, from 26 to 29 February 2008 (FAO, 2009)². The EAF Toolbox is aimed at national and local fisheries management authorities, including fishery managers, scientists and stakeholders looking for practical solutions they can apply given their circumstances and resources. By ensuring situations with low capacity are covered adequately, it is hoped that the toolbox will be seen as useful by all individuals, groups and sectors interested in the development of improved fisheries management systems to better generate positive community outcomes in each location.

The principles used to develop the toolbox are that it has to:

- **Be adaptable** and open to innovations and improvements being quickly incorporated.
- **Help users understand** and move through each of the steps for implementing EAF and allow users with **limited formal knowledge** to participate.
- Assist them to **choose** tools **appropriate for their situation** by summarising how each tool works and providing **criteria** such as cost, technical difficulty, level of participation and data requirements to assist selection.
- Provide access to guiding information especially reports, case studies, guidelines, manuals, etc. especially those accessible via **web links**. Use of academic references in the text is limited but each of the tool fact sheets has a list of useful **additional readings**.

The fact sheets presented in the EAF Toolbox are either stand-alone tools or summaries/portals to where more information is available for a major subject (e.g. stock assessment methods) each of which could probably benefit from having their own toolbox. The goal of the EAF Toolbox is to document some of the key tools that have been applied to different aspects of fisheries assessment and management. In the present printed version only selected examples of the tools are provided. The complete set of tools fact sheets, as well as suggested tools playlists by fishery types, are provided in the online version of the EAF Toolbox (www.fao.org/fishery/eaf-net).

The EAF Toolbox has been designed to guide users through each of the four main EAF management planning steps and activities using simplified text and clear instructions.

The toolbox also helps users decide which tool(s) could be most appropriate for each step given the type of fishery, their resources and capacity.

EAF management planning and implementation involves completing a series of steps and activities that are consistent with the application of any risk management system. In this core section of the EAF Toolbox, each of the EAF steps and their associated key activities are outlined with increasing levels of detail.

To assist with tool selection, the specific characteristics of each of the tools identified as relevant to completing one or more EAF activities are summarised. There is a dedicated section on consultation tools because these are relevant across most of the EAF steps.

² FAO. 2009. *Report of the Workshop on Toolbox for Applying the Ecosystem Approach to Fisheries*. Rome, 26–29 February 2008. FAO Fisheries and Aquaculture Report No. 884. Rome, FAO. 52 pp. (Available at www.fao.org/docrep/012/i0946e/i0946e00.htm).

Tool selection criteria

Implementing EAF **is possible** for all types of fisheries, including subsistence and artisanal fisheries that usually have minimal data and formal management resources, and large multinational industrial fisheries with significant data sets and resources. Suitable options have been identified to complete each EAF step to cover the range of resources and capacities that may be available.

It is always important to select the tools most effective for a situation, but for fisheries with few resources or technical capacity this is especially critical. Even when resources are not limiting, the most expensive or complex tool may not always be the best one. The tool fact sheets include user tips that explain when a tool may or may not be so good to use.

To assist with tool selection, a set of criteria have been developed to help potential users choose between the various possibilities. It is recognized that in addition to these criteria, a number of other technical and social factors can influence which tool may be most appropriate so the criteria presented are not meant to be prescriptive.

Criteria for tool selection

Overall difficulty of use:

How easy or difficult is the tool to use?

Cost:

How expensive in terms of dollars, people and time is the tool to use?

Capacity needed:

How complex is the tool and what formal technical capacity/training is needed to use it?

Formal knowledge/data required:

What level of formal background knowledge, datasets or preparatory work must be available and completed to use the tool effectively?

Participation:

What level of community participation is possible/required or encouraged when applying the tool?

Timeframe:

How long would it take to apply the tool in a specific situation?



Step 1 Initiation and scope

Step overview

The first step in undertaking comprehensive planning processes such as for EAF, should begin with the formation of an EAF project team and the development of a “roadmap”. This should outline the key drivers (internal and external) for undertaking the process, the expectations and motivations of the proponents, document the relevant stakeholders, likely impediments, the human and financial resources available and the specific set of methods to be used. This can be a very brief document (e.g. for a small community-based fishery) or a very detailed and comprehensive project plan and analysis (e.g. for a major fishery sector) which can be used to obtain formal endorsement, political backup and operational support from the relevant stakeholders and decision-making authority (central or local) to proceed.

EAF planning should not proceed until there is sufficient support and the scope of the exercise is at a practical level. A perceived lack of information should not, however, be used as an excuse to delay initiation because EAF deals with such situations.

With agreement to proceed, it is essential to formally define the scope and scale of the fishing activities, communities and geographic areas that will (or will not) be covered by the planning process. This may require clarifying any uncertainties about which agencies have management responsibility for the area and/or ecological resources under consideration.

This scoping should also identify the relevant societal/community values and high level objectives (e.g. fisheries, environment, economic, etc.) to be achieved and their hierarchy. These underpin the operational objectives targeted by management and affect which management options will generate better stakeholder compliance. All of these decisions plus summaries of any relevant background material should be documented in a scoping (EAF Baseline) report.

Key activities

- 1.1 Initial process planning and stakeholder support.
- 1.2 Defining the fishery, societal values and high level objectives.
- 1.3 Finalise the scoping and background document.



Main outputs

- I. Formation of an EAF project team and identifying the team leader.
- II. A roadmap that includes the specific methods and EAF tools to be used during the planning process, that identifies stakeholders, participants, resources, timing, timelines, etc.
- III. A decision to proceed or not with EAF management planning at this time.
- IV. If proceeding, a scoping or baseline document that clarifies what fishing activities are to be managed, the community objectives to be achieved, social values to be observed plus a summary of information about the fishery and its associated resources useful for the rest of the EAF process.

Activity 1.1 Initial process planning and stakeholder support

Overview of the activity

Where there is sufficient interest to implement EAF for a specific fishery the first action is to develop an EAF planning team and choose a team (project) leader who will also be the “champion” for the process. Given the number of activities involved in EAF management planning it is beneficial to develop a suitably detailed project plan or roadmap that documents the proposed set of tools and timetable to be used. This can be supported by initiating development of an EAF Baseline Report that documents what is known about the fishery, including what management and stakeholders want to achieve. A stakeholder analysis may be required if these groups are not already well known.

To determine what tools and participation levels are most appropriate, the available human resources, skills in facilitation, project management, stock assessment, etc. plus any financial constraints should be identified. While higher levels of stakeholder and expert participation can increase ownership of the outcome, they also increase the logistics, expense and duration. A balance between political and stakeholder expectations, resources, complexity and urgency is usually required.

A roadmap can be generated using the relevant questions (outlined below) in combination with the rest of the EAF Toolbox to determine what tools/participants/scheduling will be used. These can be documented using the EAF roadmap template or by using project planning software.

Formal approval for the roadmap may be needed from the relevant management agency (or broader government) to ensure the necessary resources will be made available and the resultant EAF plan will be implemented. The approvals process may sometimes require the use of Cost-Benefit or SWOT (Strengths, Weaknesses, Opportunities, Threats) analyses if high levels of time and resources are being requested.

If approval is obtained, a communication strategy to inform all stakeholders about the EAF process and their role should be developed and implemented. If approval is not obtained, this decision should be communicated to stakeholders and the EAF process delayed until any missing critical elements become available (e.g. financial, political, stakeholder commitment) or the scope of proposed planning methods are revised to better meet available resourcing levels/expectations.



Activity 1.1 Initial process planning and stakeholder support

Relevant questions

Roadmap development

- Who should be in the EAF planning team? Who should be the project leader?
- How complex is the fishery? This defines how complex the management system should be – but this must reflect the available management capacity.
- What stakeholder interactions have already occurred? The less well known the stakeholder groups and their connections, the more thorough the preliminary analysis.
- What time is available to get stakeholder input? Shorter time frames limit the types of stakeholder engagement that can be used, but too long a process may result in a loss of stakeholder commitment.
- Are there conflicts or potential conflicts between and within the different stakeholder groups including resources, power distribution, objectives and expectations? This can affect the consultation methods that may be best to use, and those to avoid.
- What planning resources are available? Limited resources imply that less can be spent on each of the steps, calling for less expensive methods, fewer meetings or the need to raise additional funds.
- What capacity, competencies and knowledge are available? This affects the types and complexity of the assessments that can be conducted and what preliminary engagement will be needed.
- What institutional capacity is available? This also affects what types of management measures could be used or if capacity-building is required where more complex management systems are anticipated for the future.

Roadmap review

- Are there any major risks or potential blockages to the EAF planning process?
- Do you have all the resources and cooperation and endorsement you need at appropriate levels to undertake the activities outlined in the roadmap?
- Do you have an oversight mechanism in place?
- Overall, is it currently worth proceeding with the EAF planning process?
- If it was delayed, what would be the likely reaction of stakeholder groups?