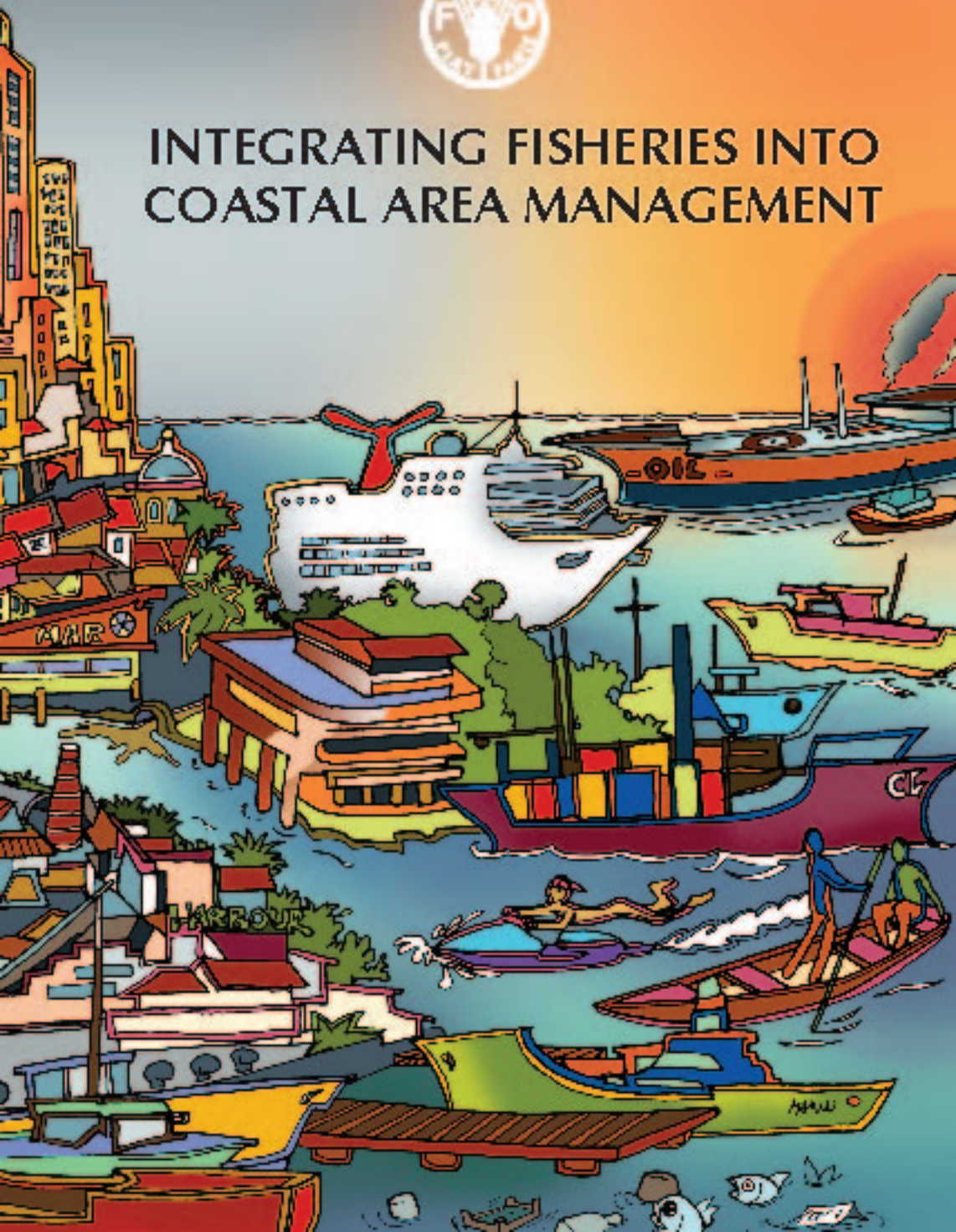




INTEGRATING FISHERIES INTO COASTAL AREA MANAGEMENT



Cover illustration by Emanuela D'Antoni

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Integrating fisheries into coastal area management

Marine and large lake fisheries depend on the coastal area in many different ways. A fishery's success is based upon continuing stocks of fish, which require healthy habitats for their own food supplies and life cycles. Activities that result in changes to a coastal environment can affect the long-term well being of fisheries. Likewise, fishing activities may impact other coastal interests and activities, such as agriculture and tourism, which also require space and resources.

Coastal developments should be well planned and managed with care, to avoid focusing too much on any single activity. Countries should protect their natural resources, keeping in mind the interests of all people living in the coastal area. This comprehensive or "holistic" approach is known as integrated coastal management (ICM).

ICM could be compared to the building of a house, which is used for a variety of activities – often by a number of residents. Many considerations are involved, including building location, characteristics of future occupants, materials available, and cost. Before construction begins, an overall planning framework is prepared, to identify needs and to guide the work.

These guidelines explain and expand upon Article 10 of the 1995 Code of Conduct for Responsible Fisheries, more commonly known as the Code of Conduct. Article 10 considers how fisheries can be included in planning and managing coastal areas and resources.



ICM framework

To conserve natural resources and include residents in decisions about their use, countries should establish appropriate policy, legal and institutional plans.

General coastal developments

A **policy** framework establishes the range of government policies that will permit development, conserve the coastal environment, and accommodate the social and economic needs of local people. Land, water, air quality and people's livelihoods should be considered and protected. Since development projects and growing populations are threats to natural resources, the challenge lies in deciding how scarce resources should be allocated.

A major policy problem in managing coastal areas involves "free and open access" to resources. For example, if mangroves, coral reefs and the open ocean can be used without restrictions, consequences like water pollution and the destruction of fish habitats may threaten the well-being of the whole area. It is important that "free and open access" to coastal resources be replaced with a policy that controls and regulates access to and the use of these resources.

A **legal** framework puts coastal management institutions and the actions undertaken by them into law. Resource use can be controlled by laws that regulate, ban or limit certain activities. Within a fishery, controls might be placed over fishing gear and practices, as well as on the area, season and time of fishing. If the regulations are not followed, penalties should be imposed.

A problem with this “regulatory” approach is enforcement. If it is not possible to enforce a particular regulation, it may be better to not introduce it. Regulations should be flexible enough to deal with a range of possible situations and to help those people involved understand their obligations.

Another approach to managing resources is the “economic” approach, which offers financial incentives or requires groups to pay for their activities through mechanism such as user fees, charges for releasing industrial waste, etc. Even if this policy can be only partly implemented, it often increases the flexibility of the management system (e.g. it may be easier to revise charges for different users than to change regulations affecting them).

Governments should be clear about what they are trying to achieve with a legal framework, and examine a range of possible solutions. They should understand that circumstances can vary, and the “best solution” may change over time.

An **institutional** framework brings together national, regional and local authorities involved in coastal planning and clearly defines their responsibilities. It is important that no single development activity is given an unfair advantage. There should be a responsible agency for important issues, with measures in place to coordinate the activities of all agencies. A truly integrated approach has responsibility for planning and allocating resources under a single institution. This ensures that authorities at all levels work together and are kept informed of coastal area policies as they are created and put into practice.

Fishery developments

Sometimes the rights of traditional fishers and fish farmers to use coastal resources are overlooked in favour of other groups such as agriculture or tourism. The fishing sector is especially susceptible to environmental damage from other activities in the area. Examples include:

- Pollution: e.g. industrial or agricultural waste, pesticides and fertilizers, sewage, oil spills.
- Habitat degradation: e.g. mangrove clearance, coal mining, soil runoffs into sea grass beds and reefs.
- Spatial conflicts: where fisheries are squeezed out from traditional areas by other coastal developments.

Fishers must be recognized as major stakeholders, with their representatives included in general coastal management planning. Authorities should have a role in environmental impact studies, issuing construction permits, drafting laws and regulations, and in decisions regarding the use of coastal area space.

Internal disputes may arise between fishers from different places using the same area, and between different kinds of fishermen, especially with regard to the use of different fishing gears. This is normally referred to as “gear interaction”. Regulations on when and where fishing may be done, or placing limitations on the use of different gears in different areas or at different times, are examples of ways to resolve internal disputes. These regulatory measures should be developed and implemented in consultation with the fishers.

If potential conflicts within fisheries and between them and other groups using the marine environment are anticipated, some conflicts may be avoided. The important thing is that fisheries and coastal area management authorities work cooperatively to identify and resolve conflicts quickly and fairly.

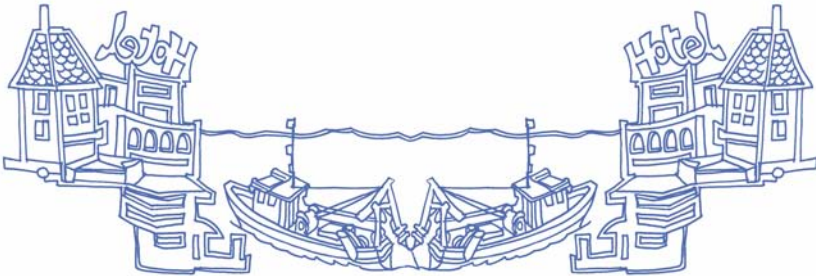
Policy measures

Once a framework for ICM has been established, the principles should be incorporated into national policies for managing coastal areas. This section describes key tasks which should be undertaken in the process.

Inform and involve the public

All groups using coastal resources should be included in making decisions about them. This is called a “participatory or inclusive” approach to decision-making. If the public, especially local residents of coastal communities, have an informed say in how their area is to be developed, good planning decisions and compliance with subsequent laws are more likely to result. Ways of involving and keeping the public informed include creating discussion groups, holding public meetings, using the media and getting non-governmental organizations (NGOs) involved.

However, the nature of fishing activities, where working hours can be long and irregular and fishing communities isolated may make it difficult to reach fishers, thereby placing them at a disadvantage compared to other coastal users. This disadvantage may be reduced if fisher’s organizations are established and legally assured a voice in the decision-making process.



Put values on the resources

Coastal resources can be “valued” relative to the benefits of a proposed activity. Determining which has more value – the resource or the activity – can be a factor in deciding how resources should be allocated. Social, cultural and economic uses should be considered and valued. The fact that a resource does not have a “market price” (i.e. is not sold), does not mean it lacks value. The value of clean air to the entire community, in

relation to the economic costs of a badly polluting industry, is one example. Or, consider a development project such as a proposed shrimp pond, which would destroy an area of mangrove. The value in the mangrove's natural role of providing a fish habitat and protecting the shoreline against storms and cyclones should not be ignored when considering potential costs and benefits of the shrimp farm.

Consider risks and uncertainties

Management policies should reflect a range of possible outcomes from proposed development projects. Fishery authorities should identify potential threats and ensure that precautions are taken to protect fisheries' interests. Prevention is best, but if damage is unavoidable, steps should be taken to minimize it, compensate stakeholders and rehabilitate the area.

The term "risk" is often used when the exact effects of a proposed activity are unknown, but the likelihood of different outcomes can be determined with the information at hand. Insurance may be available for some risks such as damage by an oil spill to a coastal reef or near-shore fishery. To be effective, risk management policies must be supported by a legal framework identifying responsibility and penalties, while recognizing that some events simply cannot be anticipated.

On the other hand, when there is not enough information to know the likelihood of certain outcomes, the term "uncertainty" is used. For example, the impact on a fishery of flood water from a storm is uncertain and is not normally covered by insurance. It is best to avoid activities where outcomes are totally uncertain or may cause irreversible environmental damage.

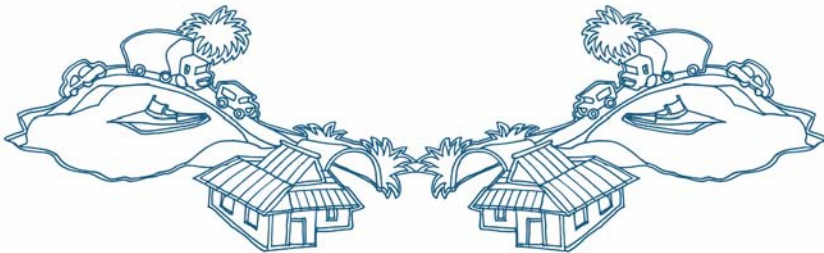
Monitor the environment

With damage prevention in mind, it is important to identify potential effects of development activities as early as

possible. Fishery authorities should monitor, or be able to collect information on, areas of interest to the sector. Some aspects which may require monitoring include:

- physical considerations (e.g. mapping of land use, changes in land features);
- biological and chemical aspects (e.g. pollution of water and sea habitats);
- economic and social considerations (e.g. population density, livelihood issues, how resources are allocated, social conflicts).

Effective monitoring often involves complex tools, sophisticated skills, and expertise, requiring assistance from outside organizations like universities or national agencies. In addition, monitoring activities must be supported by a legal framework which provides, for example, official access to the impacted areas.



Conduct research

Successful policies require a great deal of information. Countries should support research into as many aspects of managing a project area as possible. This includes researching how both existing and proposed economic activities may affect the coastal environment.

Research topics should be ranked. Such topics as characteristics of fish stocks, features of the coastal

environment, and potential social and economic impacts of the fisheries sector should be assigned a priority.

Fishery authorities may not be directly responsible for all appropriate research. However they should require that their staff, and especially scientists, be aware of conclusions reached by other people.

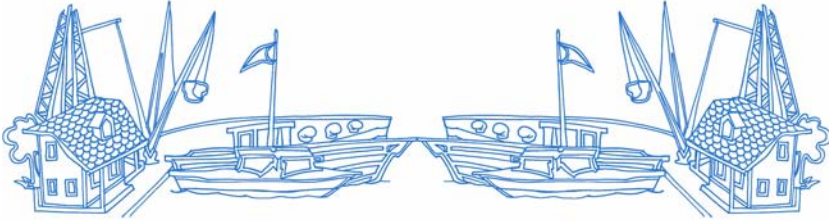
Regional cooperation

Individuals with neighbouring lands or common water sources such as a lake or a river obviously need to cooperate, and to respect one another's property and their use of common resources. Similarly, there should be a cooperative relationship among countries with neighbouring coastal areas. This is especially true in the case of managing harmful effects such as pollution resulting from development projects. Maintaining resources for all legitimate users and conserving the common environment must be a development priority. This is not only true for the current generation of people but also for those generations to come in future: this is the so-called "intergovernmental" consideration.

When it is believed that a coastal activity may have damaging effects on a bordering country, information must be shared and discussed with that country as soon as possible. An exchange of information, together with consultations regarding technical assistance and experience should take place on both the local and regional levels and include a range of stakeholders. This approach will avoid disharmony and conflict and ensure that there is broad agreement or consensus on action to be taken.

Fishery authorities should be aware that development activities involving fish populations that are shared or which migrate from one area to another may affect fish stocks of a neighbouring country. Likewise, environmental impacts such as pollution or coastal erosion may be transmitted from one country to another by ocean currents. Relevant information

about the fishery itself (e.g. biological characteristics of the fish species) and about possible habitat and pollution effects should be investigated and shared with other countries affected.



Implementation

Individual government departments, such as fisheries and agriculture, often show little concern for the impacts that their activities have on each other. As development proposals are being planned and carried out, possible impacts on other sectors should be reviewed by all the agencies involved. This will provide a way for one sector to identify concerns about the effects of another sector's plans, and establish a framework for working cooperatively to resolve conflicts.

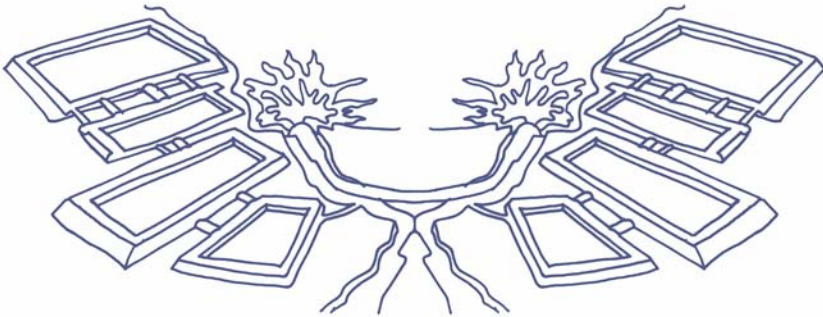
All groups involved in coastal development require trained people, appropriate technical capacities, and enough financial resources to plan their projects in a cooperative and mutually-supportive manner. This is particularly true for fisheries, whose authorities sometimes lack skills and experience in the planning and management aspects of coastal activities. Fishery representatives need to develop strong skills and experience in:

- collecting, analysing and using biological, physical, social and economic information;
- establishing ways to deal with open access issues and with impacts on other sectors;
- planning fisheries development;

- reviewing legislation and drafting new laws, and
- enforcing policies and laws.

Fisheries are best integrated into overall coastal development through informed cooperation with agencies representing other activities in the area. The goal is to balance various kinds of developments with protection of the natural environment, for the benefit of all coastal area people.

The involvement of representatives of all stakeholders groups is very important in decision-making processes because without their real participation it is likely that agreements reached will not be implemented as they should have been implemented.



Conclusion

ICM is necessary to ensure that coastal areas are planned, developed and managed in a responsible and long-term sustainable way. The coastal zone is subject to many competing uses and fisheries may be pushed out or marginalized and given lower priority because fishers and their communities are not as well organized or vocal as other interests such as those from the tourist and timber industries, aquaculture, manufacturing, etc.

A “participatory or inclusive” approach to ICM is important to ensure that all legitimate interests in the coastal

zone are fairly and transparently represented. By involving all interests in this way better policies and measures will be developed for management. More importantly, this type of participation should also lead to a greater level of compliance with measures and regulations after they are adopted and implemented. This will be so because people from the different interest groups will consider themselves to have been part of the development process and they will feel some “ownership” over it.

This booklet describes, in a non-technical manner, some important aspects of FAO Technical Guidelines for Responsible Fisheries No. 3 dealing with the integration of fisheries in to coastal area management. The purpose of this booklet is to provide information to FAO Members and other stakeholders about the importance of, and approaches to, the integration of fisheries into coastal area management. This booklet does not replace Technical Guidelines No. 3 but simply presents some of the complex information contained in these guidelines in a more simplified form so as to make it more accessible.



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