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FAO
TECHNICAL
GUIDELINES FOR
RESPONSIBLE
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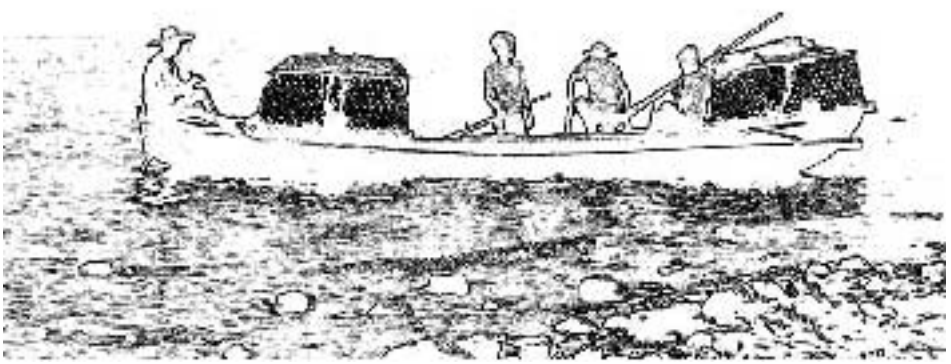
10

INCREASING THE CONTRIBUTION OF SMALL-SCALE FISHERIES TO POVERTY ALLEVIATION AND FOOD SECURITY



Cover illustration:
Trap fishermen in Batangas, Philippines. Courtesy of Francis T. Christy Jr.

FAO TECHNICAL GUIDELINES FOR RESPONSIBLE FISHERIES

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INCREASING THE CONTRIBUTION OF SMALL-SCALE FISHERIES TO POVERTY ALLEVIATION AND FOOD SECURITY

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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PREPARATION OF THIS DOCUMENT

In considering "Strategies for Increasing the Sustainable Contribution of Small-scale Fisheries to Food Security and Poverty Alleviation", at its twenty-fifth session the FAO Committee on Fisheries (Rome, 24–28 February 2003) applauded FAO's initiative to treat the small-scale fisheries sector as a stand-alone agenda item. COFI welcomed the suggestion that the Organization elaborate, in the context of the Code of Conduct for Responsible Fisheries, technical guidelines on increasing the contribution of small-scale fisheries to food security and poverty alleviation. In response FAO convened an Expert Consultation on the Role of Small-Scale Fisheries in Poverty Alleviation and Food Security, Rome, 5–8 July 2004 (FAO Fisheries Report No. 749).

The participants in the Expert Consultation were: Eddie Allison, Hans Bage, Claudia Stella Beltrán, Christophe Béné, William Emerson, Angel Gumy, Benoît Horemans, Helga Josupeit, Mousthapha Kebe, Aphichoke Kotikula, Blaise Kuemlangan, John Kurien, Audun Lem, Graeme Macfadyen, Ousmane Ndiaye, Francisco Pereira, Fabio Pittaluga, Eric Reynolds, Chandrika Sharma, Andrew Smith, Derek Staples, Somony Thay, Uwe Tietze, Philip Townsley, Benedict Satia, Ulrich Schmidt, Hiromoto Watanabe and Rolf Willmann.

On the basis of a comprehensive background document prepared by C. Béné, G. Macfadyen and E. Allison, the Consultation elaborated a detailed outline and provided its comments and proposed amendments to the text of the background document. This document then served as the basis for the preparation of these technical guidelines, the initial draft of which was prepared by G. Macfadyen. Comments on this draft were received from Kevern Cochrane, William Emerson, Serge Garcia, Benoît Horemans, Helga Josupeit, Audun Lem, Peter Manning, Rebecca Metzner, Eric Reynolds, Chandrika Sharma, Derek Staples, Jeremy Turner and Rolf Willmann. Peter Manning was responsible for the revision of the Guidelines.

The Consultation also recommended that a more comprehensive technical paper be prepared as a companion document to the guidelines (FAO Fisheries Technical Paper No. 481).

The Guidelines have been prepared with the support of the Sustainable Fisheries Livelihoods Programme – a partnership between the United Kingdom of Great Britain and Northern Ireland Department for International Development, FAO and 25 countries of West Africa – and of FishCode, FAO's umbrella programme for implementation of the Code of Conduct for Responsible Fisheries.

FAO. 2005. *Increasing the contribution of small-scale fisheries to poverty alleviation and food security*. FAO Technical Guidelines for Responsible Fisheries. No. 10. Rome, FAO. 79 pp.

ABSTRACT

The objectives of these Technical Guidelines are to provide a focus on small-scale fisheries and their current and potential role in contributing to poverty alleviation and food security by expanding on the guidance on small-scale fisheries offered by the Code. The Guidelines are complementary to existing Technical Guidelines for Responsible Fisheries.

Most small-scale fishers are in developing countries and many live in communities characterized by poverty and food insecurity. Small-scale fishing communities are faced with an array of serious problems, including overexploitation and depletion of resources, lack of alternative sources of employment, rapid population growth, migration of populations, displacement in coastal areas due to industrial development and tourism, pollution and environmental degradation and conflicts with large commercial fishing operations. However, small-scale fisheries are critical for food security and poverty alleviation in many countries.

The first part of the Guidelines discusses the current contribution, role and importance of small-scale fisheries in poverty alleviation and food security. It examines the importance of small-scale fisheries for poverty alleviation at a national, local and household level. It also notes the nutritional qualities of fish and thus the particular role of fish in nutritional aspects of food security. The fact that about half of all fish caught for human consumption comes from small-scale fisheries underlines the importance of this sub-sector for the world fish supply. In many countries small-scale fisheries contribute to national food security both directly – where fish is a crucial part of the daily diet, and indirectly – by generating foreign exchange earnings that enable the purchase through trade of a range of food products.

The second part of the Guidelines explores ways through which the contribution of small-scale fisheries to poverty alleviation and food security could be enhanced. A vision for the future of small-scale fisheries is presented as a goal towards which the subsector should develop. Ensuring greater participation by small-scale fishers and their communities in the formulation of policies, the development of related legislation and regulations, and in management decision-making and implementation processes, is vital to the realization of this vision. The central role of effective fisheries management, the importance of considering cross-

sectoral uses of fisheries and related resources, the special role of women in fish marketing, processing and value addition, the significant scope for trade, the critical role that adequate financing may have in enabling transitions for effective fisheries management and the role of knowledge in making informed decisions are all discussed in these Guidelines.

CONTENTS

Page

Page

Appendix: Tables

These tables are extracted from Béné, C.; Macfadyen, G.; Allison, E.H. [In press]. Increasing the contribution of small-scale fisheries to poverty alleviation and food security. FAO Fisheries Technical Paper, No. 481. Rome, FAO.

ACRONYMS/ABBREVIATIONS

ACFR	Advisory Committee on Fishery Research
CBFM	Community-based Fisheries Management
COFI	Committee on Fisheries
CSR	Corporate Social Responsibility
DAC	Development Action Committee (of OECD)
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization of the United Nations
FS	Food Security
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
IUU	Illegal, Unreported and Unregulated (Fishing)
LIFDC	Low Income Food Deficit Country
MCS	Monitoring, Control and Surveillance
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PP	Poverty Prevention
PR	Poverty Reduction
PRA	Participatory Rural Appraisal
PRSP	Poverty Reduction Strategy Papers Poverty Reduction Strategy Plans
SID	Society for International Development
SOFI	State of Food Insecurity in the World
SPS	Agreement on Sanitary and Phytosanitary Measures
TBT	Agreement on Technical Barriers to Trade
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

BACKGROUND

1. From ancient times, fishing has been a major source of food for humanity and a provider of employment and economic benefits to those engaged in this activity. However, with increased knowledge and the dynamic development of fisheries, it was realized that living aquatic resources, although renewable, are not infinite and need to be properly managed, if their contribution to the nutritional, economic and social well-being of the growing world's population was to be sustained.

2. The adoption in 1982 of the United Nations Convention on the Law of the Sea provided a new framework for the better management of marine resources. The new legal regime of the oceans gave coastal States rights and responsibilities for the management and use of fishery resources within the areas of their national jurisdiction, which embrace some 90 percent of the world's marine fisheries.

3. In recent years, world fisheries have become a dynamically developing sector of the food industry, and many States have striven to take advantage of their new opportunities by investing in modern fishing fleets and processing factories in response to growing international demand for fish and fishery products. It became clear, however, that many fisheries resources could not sustain an often uncontrolled increase of exploitation.

4. Clear signs of over-exploitation of important fish stocks, modifications of ecosystems, significant economic losses, and international conflicts on management and fish trade threatened the long-term sustainability of fisheries and the contribution of fisheries to food supply. Therefore, the Nineteenth Session of the FAO Committee on Fisheries (COFI), held in March 1991, recommended that new approaches to fisheries management embracing conservation and environmental, as well as social and economic, considerations were urgently needed. FAO was asked to develop the concept of responsible fisheries and elaborate a Code of Conduct to foster its application.

5. Subsequently, the Government of Mexico, in collaboration with FAO, organized an International Conference on Responsible Fishing in Cancún in May 1992. The Declaration of Cancún endorsed at that Conference was brought to the attention of the UNCED Summit in Rio de Janeiro, Brazil, in June 1992, which supported the preparation of a Code of Conduct for Responsible Fisheries. The FAO Technical Consultation on High Seas Fishing, held in September 1992, further recommended the elaboration of a Code to address the issues regarding high seas fisheries.

6. The One Hundred and Second Session of the FAO Council, held in November 1992, discussed the elaboration of the Code, recommending that priority be given to high seas issues and requested that proposals for the Code be presented to the 1993 session of the Committee on Fisheries.

7. The Twentieth Session of COFI, held in March 1993, examined in general the proposed framework and content for such a Code, including the elaboration of guidelines, and endorsed a time frame for the further elaboration of the Code. It also requested FAO to prepare, on a "fast track" basis, as part of the Code, proposals to prevent reflagging of fishing vessels which affect conservation and management measures on the high seas. This resulted in the FAO Conference, at its Twenty-seventh Session in November 1993, adopting the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, which, according to FAO Conference Resolution 15/93, forms an integral part of the Code.

8. The Code was formulated so as to be interpreted and applied in conformity with the relevant rules of international law, as reflected in the United Nations Convention on the Law of the Sea, 1982, as well as with the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995, and in the light of, *inter alia*, the 1992 Declaration of Cancún and the 1992 Rio Declaration on Environment and Development, in particular Chapter 17 of Agenda 21.

9. The development of the Code was carried out by FAO in consultation and collaboration with relevant United Nations Agencies and other international organizations, including non-governmental organizations.

10. The Code of Conduct consists of five introductory articles: Nature and Scope; Objectives; Relationship with Other International Instruments; Implementation, Monitoring and Updating and Special Requirements of Developing Countries. These introductory articles are followed by an article on General Principles, which precedes the six thematic articles on Fisheries Management, Fishing Operations, Aquaculture Development, Integration of Fisheries into Coastal Area Management, Post-Harvest Practices and Trade, and Fisheries Research. As already mentioned, the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas forms an integral part of the Code.

11. The Code is voluntary. However, certain parts of it are based on relevant rules of international law, as reflected in the United Nations Convention on the Law of the Sea of 10 December 1982. The Code also contains provisions that may be or have already been given binding effect by means of other obligatory legal instruments amongst the Parties, such as the Agreement to Promote Compliance with Conservation and Management Measures by Fishing Vessels on the High Seas, 1993.

12. The Twenty-eighth Session of the Conference in Resolution 4/95 adopted the Code of Conduct for Responsible Fisheries on 31 October 1995. The same Resolution requested FAO *inter alia* to elaborate appropriate technical guidelines in support of the implementation of the Code in collaboration with members and interested relevant organizations.

PREFACE

The subject of these Guidelines, “Increasing the contribution of small-scale fisheries to poverty alleviation and food security”, acknowledges that poverty and food insecurity are widespread among small-scale fishers, and that a change in the way in which fisheries are managed is necessary in order to improve the lives of small-scale fishers and fishworkers.

Poverty is a complex phenomenon involving failure to meet a range of basic human needs and the denial of options that have consequences for opportunities to live long, healthy and creative lives. Poverty in fishery-dependent communities, therefore, is not solely related to the abundance of the catch, market opportunities or the state of the resource. It is also critically dependent on how the benefits from the use of fishery and other resources are used and whether a range of basic services (e.g. in health and education) are provided.

Poverty is both partly an outcome of inadequate fisheries management (resulting in depleted fish stocks, overcapacity, etc.) and a constraint in improving fisheries management. It is a constraint because, in the context of generally poor communities, it is impossible to exclude people living on the edge of survival from fishing without creating alternative sources of food and livelihoods. Exhortations about reducing pressure on fisheries resources are futile as hungry people will choose, quite reasonably, to survive in the short-run rather than to preserve or rebuild a resource that they might not otherwise survive to benefit from. Increasing the contribution of fisheries to poverty alleviation and food security thus is an integral part of the larger challenge of development.

If management of small-scale fisheries is neglected in conditions where the demand for fisheries resources is greater than the productive capacity of the resources, then inevitably there will be a depletion of stocks and a consequent reduction in benefits accruing from fishing. Effective management of fisheries aims to move fisheries towards use of aquatic resources that will eventually approximate an economically optimal position which is inextricably tied to the biological health of the resources in question. In this way, benefits accruing from use of the fisheries resources are maximized for society as a whole. But it is equally important to ensure that there is an equitable distribution of the benefits that do accrue, resulting in an increase in the contribution made by small-scale fisheries to poverty alleviation and food security.

Thus optimizing benefits from the resource through effective fisheries management and ensuring an equitable distribution of those benefits are both important issues. However, these Guidelines focus principally on the distributional aspects because fisheries management has been extensively discussed in earlier FAO Fisheries Technical Guidelines for Responsible Fisheries and FAO Fisheries Technical Papers.

In the years since the Code of Conduct for Responsible Fisheries was developed, there has been a growing realization of the importance of addressing socio-economic issues, especially those relating to the small-scale subsector. About 90 percent of fishers worldwide are small-scale fishers, some 50 percent of fish used for direct human consumption is harvested by the subsector, and it provides livelihoods to millions of people in poor fishing communities. Recognizing the relationship between poverty and the sustainable use of resources, the Johannesburg Plan of Implementation of the WSSD stated that "eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development".[1] These Guidelines seek to reflect this new emphasis and to expand on the guidance offered by the Code.

[1] Johannesburg Plan of Implementation (para. 7), found at: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm

INTRODUCTION

Globally more than one billion people are living on less than US$1 a day, and 840 million people remain classified as undernourished. As a result, in recent years there has been a re-focusing on poverty and food security by many Non-governmental Organizations (NGOs), academics, development practitioners, governments, and donor agencies.

The 2002 United Nations (UN) World Summit on Sustainable Development (WSSD), the 2000 World Development Report published by the World Bank, the UN Millennium Declaration adopted in 2000,[2] and the 1996 FAO World Food Summit, all considered poverty alleviation as a central priority.

With regard to food security, at an international conference on the Sustainable Contribution of Fisheries to Food Supply held in Kyoto, Japan in 1995, the 95 participating states approved a Declaration and a Plan of Action to enhance the contribution of fisheries to human food supply. The 1996 World Food Summit stressed the connection between food security and the need for sustainable management of natural resources. The 2002 WSSD also focused on food security as a key issue and reiterated a global commitment to responsible fisheries.

An estimated 90 percent of the 38 million people recorded by the FAO globally as fishers and fish-farmers[3] are classified as small-scale. An additional more than 100 million people are estimated to be employed in other fisheries associated occupations,[4] particularly in processing and trading, bringing the total estimated to be directly or indirectly employed in small-scale fisheries and aquaculture to about 135 million in 2002. In addition, there are millions of other rural dwellers involved in seasonal or occasional fishing activities who are not recorded as "fishers" in official statistics. These people include many millions, especially in Asia and Africa, living in remote rural areas, where there are few other sources of

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2 The Millennium Declaration contains the commitment to halve, by the year 2015, the proportion of the world's population whose income is less than one dollar a day.

3 FAO Fisheries Department. 2004. *The state of world fisheries and aquaculture, 2004*. The state of world fisheries and aquaculture. Rome, FAO. 153 pp.

4 Estimate based on a 1:3 ratio of primary employment to secondary employment in fisheries.

alternative income and employment offering significant potential to contribute to livelihood strategies.

Fish is an important source of dietary protein, micro-nutrients and essential fatty acids for millions of the world's poor and contributes to their caloric intake.

While there is often very little precise information about the real contribution of small-scale fisheries to livelihoods and economies in developing countries, and although many small-scale fishing communities are poor and vulnerable, it is now widely acknowledged that small-scale fisheries can generate significant profits, prove resilient to shocks and crises, and make meaningful contributions to poverty alleviation and food security. In addition, while it is true that small-scale fisheries can overexploit stocks, harm the environment, and may generate only marginal profit levels, in some cases small-scale fisheries can have significant comparative advantages[5] over industrial fisheries in terms of:

- greater economic efficiency;
- fewer negative impacts on the environment;
- the fact they are decentralized and geographically spread out and therefore have the ability to share economic and social benefits more widely; and
- their contribution to cultural heritage, including environmental knowledge.

The Code generally provides principles and standards for both capture fisheries and aquaculture. It explicitly includes fish processing, trade in fish and fish products, fishing operations, research and the integration of fisheries into coastal management (Art.1.2). In its introductory paragraph, the Code "*recognizes the nutritional, economic, social, environmental and cultural importance of fisheries*". The Code describes one of its objectives as being to "promote *the contribution of fisheries to food security and food quality, giving priority to the nutritional needs of local communities"* (Art. 2 (f)). It also recognizes the context of fisheries management as

[5] Kurien, J.; Willmann, R. 1982. *Economics of artisanal and mechanized fisheries in Kerala. A study of costs and earnings of fishing units.* Madras, FAO/UNDP Small-Scale Fisheries Promotion in South Asia Project RAS/77/044, Working Paper (34):112 pp. See comment footnote 52.

including "*food security, poverty alleviation and sustainable development*" (Article 6.2).

In light of this, and recent international attention to poverty and food security issues since the development of the Code, the twenty-fifth Session of the Committee on Fisheries, Rome, Italy, 24–28 February 2003, welcomed the suggestion that the FAO elaborate, in the context of the Code, technical guidelines for increasing the contribution of small-scale fisheries to food security and poverty alleviation.

The objectives of these Technical Guidelines are to provide a special focus on small-scale fisheries and their current and potential role in contributing to poverty alleviation and food security by expanding on relevant principles and standards set forth in the Code, and to make practical suggestions about ways to ensure that this role can be enhanced.

These Guidelines encompass both marine and inland fisheries, and are complementary to existing Technical Guidelines on Fisheries management (No. 4), The ecosystem approach to fisheries (No. 4, Suppl. 2), Inland fisheries (No. 6) and Aquaculture development (No. 5) that have relevance to small-scale fisheries.

It is also noted that FAO Fisheries Technical Paper No. 481 on the same topic as these Guidelines[6] provides much additional background information and detail, especially in the form of examples, which may be of interest to the reader.

These Guidelines are directed at decision-makers, planners, and all those involved in developing and implementing policy relevant to small-scale fisheries, including fishers and fishworkers.

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[6] Béné, C.; Macfadyen, G.; Allison, E.H. [In press]. *Increasing the contribution of small-scale fisheries to poverty alleviation and food security*. FAO Fisheries Technical Paper. No. 481. Rome, FAO.

CONCEPTS

Small-scale fisheries. The FAO Working Group on Small-Scale Fisheries (Bangkok, November 2003) agreed that it would be inappropriate to formulate a universally applicable definition for a sector as dynamic and diverse as small-scale fisheries. The Working Group felt that it would be best to describe the sector on the basis of the range of characteristics that are likely to be found in any particular small-scale fishery. The following characterization of small-scale fisheries was therefore endorsed:

> Small-scale fisheries can be broadly characterized as a dynamic and evolving sector employing labour intensive harvesting, processing and distribution technologies to exploit marine and inland water fishery resources. The activities of this subsector, conducted full-time or part-time, or just seasonally, are often targeted on supplying fish and fishery products to local and domestic markets, and for subsistence consumption. Export-oriented production, however, has increased in many small-scale fisheries during the last one to two decades because of greater market integration and globalization. While typically men are engaged in fishing and women in fish processing and marketing, women are also known to engage in near shore harvesting activities and men are known to engage in fish marketing and distribution. Other ancillary activities such as net-making, boatbuilding, engine repair and maintenance, etc. can provide additional fishery-related employment and income opportunities in marine and inland fishing communities. Small-scale fisheries operate at widely differing organizational levels ranging from self-employed single operators through informal micro-enterprises to formal sector businesses. This subsector, therefore, is not homogenous within and across countries and regions and attention to this fact is warranted when formulating strategies and policies for enhancing its contribution to food security and poverty alleviation.[7]

The Working Group also noted some additional technological dimensions, in particular the fact that small-scale fishers usually operate in-shore, target

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[7] FAO/Advisory Committee on Fisheries Research. 2004. *Report of the second session of the Working Party on Small-scale Fisheries. Bangkok, Thailand, 18 – 21 November 2003.* FAO Fisheries Report. No. 735 Rome, FAO. 21 pp.

multiple species, and use a large range of different fishing gear and techniques, some of which may be relatively simple. In addition, the "multi-use, multi-user environment" of small-scale fisheries should be noted. Both coastal and inland fisheries compete with other users for the resource-base and this multi-use, multi-user dimension is another key characteristic which can greatly affect the livelihoods of fishing communities.

Poverty. The Human Development Report,[8] in a discussion of poverty and human development, reasons that

> Poverty means that opportunities and choices most basic to human development are denied – to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-respect and the respect of others.

Poverty may also be seen as encompassing

> …different dimensions of deprivation that relate to human needs, including consumption and food security, health, education, rights, voice, security, dignity and decent work,[9]

This understanding of poverty results from a long evolution in the ways it has been perceived, understood and measured. It recognizes the limitations of viewing poverty solely in terms of income or consumption, and the need for a broader "multidimensional" definition. Poverty in fishery-dependent communities is therefore not necessarily directly – or only – related to the resource or catch levels. For example, although resource overexploitation may be a major cause of impoverishment for fishing communities, extreme poverty can also be observed in remote fishing camps where fishers catch and trade reasonable volumes of fish, but where communities lack access to health and other public services and are politically un-represented.

Poverty reduction. In the context of these guidelines, poverty reduction is a process through which people are becoming measurably better off over time due to their involvement/investment in fisheries activities. Poverty reduction, therefore, refers to a situation where wealth is generated and

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[8] UNDP. 1997. *Human Development to Eradicate Poverty*, Human Development Report, United Nations Development Programme, New York.

[9] Adapted from a definition in the Development Action Committee's (DAC) Guidelines on Poverty Reduction (OECD 2001).

capital accumulated through capital and labour investment, thus helping to lift people out of poverty in all its dimensions.

There are three economic levels at which poverty reduction can occur: (i) wealth generation at the *household level* and its distribution within households – to men, women and children, (ii) development at the *community level*, and (iii) economic growth at the *national level*.

The interdependence between these three levels is not straightforward. Migrant fishers may earn significant cash income that is not remitted back to their households, leaving their families in conditions of poverty. A few fishers may become very rich (wealth generation) without necessarily benefiting the community within which they live. On the other hand, in some countries where small-scale fisheries contribute significantly to national economic growth, many fishing communities in remote coastal areas are still living at the margins of subsistence and dignity.

Poverty prevention. Poverty prevention refers to the role of fisheries activities in helping people to maintain a minimum standard of living (even when it is below a given poverty line) and which helps them to survive. Poverty prevention thus refers to reducing risks and increasing safety net functions in a general context of vulnerability.

Vulnerability. Vulnerability can be conceptualized[10] as a condition arising from the interaction of three factors, namely:

- *risk exposure*, or the nature and degree to which a household (or community) is exposed to a certain risk (e.g. a natural disaster such as the December 2004 Asian Tsunami – see Box 1), conflicts, macro-economic changes, etc.);
- *sensitivity to this risk*, measured for instance through the dependence of the household (or community) on fishing activity for food security or income generation; and
- *adaptive capacity* of the household (or community) to deal with risk – i.e. its ability to cope with changes.

[10] e.g. Adger, W.N.; Brooks, N.; Bentham, G.; Agnew, M.; Eriksen, S. 2004. *New indicators of vulnerability and adaptive capacity*. Tyndall Centre for Climate Change Research, Technical Report 7, Norwich, U.K.

Box 1: Vulnerability and the tsunami disaster

The earthquake off the coast of Sumatra of 26 December 2004 was the fourth largest in the world since 1900 and the largest in nearly half a century. The resulting tsunami surged with devastating force against at least 12 countries, reaching as far as the Horn of Africa and causing one of the world's worst natural disasters in modern times. It killed about 300 000 people (a precise figure will never be known) and shattered the livelihoods of millions, who lost their homes and productive assets.

The tsunami disaster disproportionately affected poor people and especially poor fishing communities, which lost all or most of their livelihood assets. In several localities the communities were destroyed in their entirety.

The tsunami demonstrates the utter devastation possible as a result of a natural disaster and the vulnerability of fishing communities to it. Since fishing communities are often situated on low lying coastal land, lives, homes and productive assets are highly exposed to natural disasters. Although many afflicted communities have shown great resilience, their adaptive capacity is low as a result of poverty, making it difficult to recover and adapt to new circumstances.

Poor people tend to be more vulnerable (more exposed and more sensitive to risk and with less adaptive capacity) than the non-poor. The poor generally cannot access insurance or good quality services (e.g. health, education), for instance, and may depend highly on the fisheries to ensure their food security. But it is also true that in a given environment, with the same level of income and similar access to public services, some people may still be more vulnerable than others due to the very nature of the activity on which they depend.

Poverty alleviation. Poverty alleviation may be used as an inclusive term encompassing poverty reduction and poverty prevention (and vulnerability reduction) .

Food security. The 1996 World Food Summit defined food security as "a condition when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

A country's capacity to produce sufficient food to feed its population, referred to as national food self-sufficiency, is neither necessary nor sufficient to guarantee food security at the individual/household level. Some countries may be food self-sufficient, yet remain with a large proportion of

their populations suffering conditions of food insecurity; other countries may not be self-sufficient yet exhibit little food insecurity due to a strong capacity to import. Food security, therefore, is brought about by a combination of individual, household, community, national and even international factors. In particular, for national self-sufficiency to ensure individual food security, it requires and presupposes efficient "trickle-down" and redistribution mechanisms, and transfer-based entitlements (i.e. individual-based access to these mechanisms).[11]

Another aspect of food security is its linkage to the production process. Fishing can contribute *directly* to food security through the supply of fish itself (i.e. through subsistence mechanisms). But it may also contribute *indirectly* to food security through revenues generated from production and related processing and marketing activities (whether individuals are self-employed or paid wages), which can then be used to purchase food.

A further dimension of the "fish-food security" issue is the growing imbalance between fish supply and fish demand at the world level, which has resulted in a general trend of rising prices for fish. The current situation of the world's capture fisheries – which have reached a plateau in production of around 95 million tonnes per year[12] – contrasts with the still increasing world population and its associated growing demand for food in general as well as for fish. Measured in terms of annual per capita fish supply, these diverging trends resulted in an aggregate decrease per capita of 10 percent between 1987 and 2000.

Food security is a fundamental dimension of poverty. People who are chronically poor usually lack access to adequate food. Malnutrition negatively affects people's working and learning capacity, and may affect vulnerable groups living just above the poverty threshold, causing them to enter the ranks of the poor. Eliminating hunger and malnutrition, therefore, is a precondition for the eradication of poverty.

The different dimensions of poverty and food security are summarized in the tables in the Appendix.

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[11] Sen, A.K. 1996. *Economic Interdependence and the World Food Summit.* Development 4 Journal of SID.

[12] FAO, 2004 (see footnote 3).

1 CONTRIBUTION, ROLE AND IMPORTANCE OF SMALL-SCALE FISHERIES IN POVERTY ALLEVIATION AND FOOD SECURITY

1.1 Small-scale fisheries and poverty alleviation

1.1.1 Contribution of small-scale fisheries to economic growth at the national level

1.1.1.1 Foreign exchange

Small-scale fisheries can make significant contributions to national economies through the generation of foreign exchange derived from international trade. International trade in fish and fishery products has grown rapidly over the last twenty years. Export values have risen from US$ 15 billion in 1980 to US$ 56 billion in 2001. In the same period developing countries' share of total exports has risen from 40 percent to 50 percent, with net receipts (i.e. deducting their imports from the total value of their exports) from fish trade by developing countries increasing from less than US$ 4 billion to almost US$ 18 billion. Small-scale fisheries are playing an increasingly important role in the fish exports of many developing countries.[13]

1.1.1.2 Multiplier/GDP effects

Income multiplier effects[14] can potentially "trickle up" to the national economy ensuring that small-scale fisheries can support national economic growth through contributions to GDP. The contribution made by the fisheries sector to GDP typically ranges from around 0.5–2.5 percent, but may be as much as 7 percent in some countries, such as Senegal, where fisheries are a key economic sector compared to other sectors in the national

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[13] Lem, A. 2003. *The WTO Doha round and fisheries; what is at stake.* EUROFISH 4.

[14] Multipliers arise because fishing activities use the products of other industries/businesses to produce their own products, and because outputs from fishing become inputs to another industry/business. The main concept of the multiplier is therefore based on the recognition that the various sectors that make up the economy are interdependent.

economy. However, indirect and induced multiplier effects[15] of small-scale fishing activity are generally not disaggregated at national level and are often difficult to estimate.

1.1.1.3 Tax generation

Taxes provide the state with an opportunity to assist both poverty reduction and poverty prevention initiatives. Taxes made available to national treasuries can be spent on re-distributive mechanisms aimed at targeted poverty prevention or on generic social support. And they might also be used to invest in, and provide support for, infrastructure and services that are vital for economic development, but which would be unlikely to be supplied by the private sector – examples include the construction of transport infrastructure such as roads to facilitate access to markets, and the provision of education and health care facilities. Taxes, of course, can also be used to support sector-specific aid and development programmes, and recurrent budgets (e.g. in the fisheries sector), which might contribute to both poverty prevention and poverty reduction.

Small-scale fisheries can make national-level contributions to economic growth through the generation of a wide range of taxes. This is particularly the case in some countries where (i) fish landings tend to be concentrated at a limited number of sites where it is easy to collect taxes and (ii) where the decentralization process is offering opportunities to local governments to collect revenues. As fish is a very visible product, its trade is easily taxed.

However, in other developing countries collection of taxes from small-scale fisheries is not well-established due to the organizational difficulties of tax collection, and the inability or reluctance of small-scale operators to keep sufficient records on which tax levels can be calculated or estimated, or on the level of poverty of fishing communities. This characteristic, which is not specific to the small-scale fisheries, is exacerbated, however, in this specific subsector by (i) the frequent geographical remoteness of the area where fishing communities or camps are established, and (ii) the high degree of informality in capture fisheries and in related small-scale trading and processing activities.

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[15] See Section 1.1.2 below for an explanation of the differences between direct, indirect and induced multiplier effects.

1.1.2 Contribution of small-scale fisheries to local economies

Wealth generated by individuals, households or small enterprises can make significant contributions to local economies through income and employment multiplier effects. This is especially the case in fisheries because of the "cash crop" nature of the harvest.[16] Fish may be one of the few products in some rural economies that can generate cash to spur and stimulate demand, because other food products may be more generally bartered or consumed within the household.

As well as the *direct impacts* related to sales, and to income and employment effects on the producers themselves, which result from changes in the demand or production of fish products, there are *indirect impacts* "upstream" and "downstream" of the production activity that occur through the commodity/supply chain. "Upstream" activities are those activities supplying inputs to the fishing operation. Typical inputs for small-scale capture fisheries include: investment costs in vessels, engines and gear; operational costs of fuel, ice, food, bait; labour costs; financial services; and maintenance costs. "Downstream" activities are those following the harvesting of product, which themselves require inputs. Some examples of the inputs required are: investment in design, construction and equipping, processing and marketing facilities; labour; transport of fish from landing sites and to markets; financial services; variable costs such as ice, knives, wood for smoking, salt for drying, packaging materials and fish boxes; and maintenance costs. *Induced impacts* are also brought out in the form of sales, income and employment effects from the changed levels of income and expenditure throughout the local economy as a result of direct and indirect impacts (e.g. fishing crew may use their earnings to purchase groceries or household items).

Taking the upstream and downstream indirect activities together, and considering the induced impacts, one can easily imagine how small-scale fishing activities can become the main driver of poverty reduction, particularly in rural locations, with a web of businesses and individuals generating sales, income and employment as a result of the multiplier effects of fishing activity. The impacts on poverty of these upstream and downstream activities may not be the same for men and women, depending

[16] Fish not used for subsistence.

on how access to resources and control over infrastructure and services are gendered.

Small-scale fisheries may also contribute taxes at the local level, which can subsequently be used for local economic development, including poverty alleviation strategies.

1.1.3 Contribution of small-scale fisheries to household poverty alleviation

1.1.3.1 Small-scale fisheries as a central element in livelihood strategies

Worldwide about 38 million people are estimated to be fishers and fish-farmers, about 95 percent (36 million) of whom are from Africa, Asia and Latin America.[17] Of these around 68 percent (26 million) are estimated to be involved in marine and inland small-scale capture fisheries (ibid.). Assuming a 1:3 ratio for employment in direct upstream and downstream activities, over 78 million people depend on small-scale fishing and directly related activities (processing, trading, ancillary services, etc.) for their livelihoods in developing countries. If on average there are two additional dependents for each job, then it can be estimated that there would be some 234 million people are dependent on fisheries in developing countries.

Not included in these estimates, however, are the other hundreds of millions of people who are engaged in temporary fishing activities in marine areas and, more typically, in rivers, creeks, small lakes and reservoirs, seasonal or temporary ponds, wetland and floodplains.[18] In these cases, fishing is not a full-time occupation but represents one component of multi-activity livelihood strategies developed by individuals and households. Within these strategies, fishing may appear amongst activities involving low human and financial capital, and undertaken in a rather occasional manner; or may represent a more prominent – but still seasonal – activity strongly integrated into the annual round of livelihood activities. When fishing fits within a flexible matrix of various activities that constitute the basis of a diversified livelihood strategy upon which households rely, it can help to (i) spread risks between various economic activities in an uncertain environment and

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[17] FAO, 2004 (see footnote 3).

[18] Because fishing is not, in most of these cases, perceived as the household's main activity (which is more frequently recorded in governments' statistics as "farmers"), the contribution of fisheries is seldom recognized and accounted for, and is usually ignored by planners and policy-makers.

therefore reduce vulnerability, (ii) create a synergy between the inputs and outputs of these activities and thereby enhance capital accumulation and income opportunities, and (iii) generate cash when other household activities offer little potential for doing so. Fishing as a secondary or complementary activity can thus be essential for rural households both in terms of income and food security.

1.1.3.2 Fishing (and fish-trading) as a safety-net activity for the poor

Although small-scale fisheries may contribute to poverty reduction at the household level, it should be recognized that at the present time the most important contribution of small-scale fisheries to poverty alleviation[19] is probably through their role in poverty prevention. Indeed, experience suggests that for the large majority of households involved in fishing activities (full-time, temporary or occasional fishers) in developing countries, fishing and related activities have not generated high economic returns but instead have helped them to sustain their livelihoods and have prevented them from falling deeper into deprivation.

In situations of economically or institutionally restricted access to other capital (e.g. financial capital such as credit) or production factors (such as private land) the relatively easy and free access to fishing grounds allows poor people to rely more heavily on the local commons' resources to obtain the goods and services they need to sustain their livelihoods, or to gain access to paid employment. Inland fisheries are particularly important in this context. This safety-net dimension of fisheries is of greater importance and relevance to poor and marginalized households – generally those with limited access to land and other resources.

Although these poverty prevention mechanisms are perhaps less attractive from a purely economic point of view – in the sense that no significant surplus rent is generated by the activities – the role of small-scale fisheries as a livelihood support and coping mechanism for the poor is crucial from a social point of view, especially in areas where alternative employment may be scarce and social security programmes either minimal or non-existent. In these areas fisheries can play a critical role as a "welfare" (or redistributive) system, which would otherwise have to be provided through other forms of

[19] At least in terms of number of people concerned.

social support by local or central government (e.g. through “food for work” or unemployment benefit programmes).

Small-scale fisheries can also provide a critical safety net for vulnerable households (even those which were not previously poor) when they face a sudden decline in their income. This can happen, for example, when the head of a household loses his or her job; or if farm crops fail; or, on a larger scale, when the local or even national economy deteriorates. Recurrent civil wars or military conflicts, population displacement, and natural disasters also create circumstances where those affected turn to fisheries as additional or alternative sources of income, food, or employment, especially given the open-access nature, or poor management, of many fish resources.

The reliance on fisheries to provide income for the poorest not only concerns fisheries activities *per se*, but applies also to processing and trading activities. This aspect adds an important gender dimension to the discussion, given that women are usually the main participants in these related sectors.

From a policy point of view and, in particular, from a poverty prevention point of view, it is important to realize that open-access is the key mechanism which permits the “safety valve” function of fisheries to operate and allows people to engage, temporarily or permanently, in the sector. This raises important questions concerning the trade-offs that may need to be made if one wishes to maintain the capacity of small-scale fisheries to play their safety-net role (poverty prevention), while at the same time trying to restrict (or at least control) access to these resources for sustainability reasons and to increase their wealth generating potential (poverty reduction).

1.2 Small-scale fisheries and food security

1.2.1 Nutritional contribution of fish to food security

Nutritionally, fish is often presented as an important source of *protein*, especially where other sources of animal protein are scarce or expensive. FAO (2002) has recently estimated that fish provides about 19 percent of the protein intake in developing countries. This figure, however, represents an average at a global level and does not reflect the very large heterogeneity at the national or, even more importantly, at the local level. The share of fish in animal protein consumption can for instance exceed 25 percent in many poor countries and reach 90 percent in small-island states and isolated parts of coastal or inland areas.

Fish makes a minor contribution to calorie provision. Fish offers up to 180 calories per capita per day, but reaches such levels only in a few countries where there is a lack of alternative locally produced protein or where a preference for fish has been developed and maintained. More generally on a national basis, fish provides an average of 20 to 30 calories per day.

In low-income countries, staples such as rice, wheat, maize and cassava make up the bulk of the food consumed by people, supplying the majority of energy and nutrients. However there are some essential *micro-nutrients* which are not found in these staples or found only in small quantities – for example: iron, iodine, zinc, calcium, vitamin A and vitamin C. These nutrients must be supplied by other foods such as fish or vegetables. Fish is particularly rich in these micro-nutrients. Fish are also an important source of fatty acids that are necessary for the development of the brain and body. The importance of fish as a crucial element in the diet of a population, therefore, is now widely recognized, especially in the diets of young children, infants and pregnant women.

1.2.2 The contribution of small-scale fisheries to world fish supply and the impact on fish food security

At the global level, consumption of fish as food has doubled since 1973 and the developing world has been responsible for over 90 percent of this growth, much of it from small-scale fisheries, especially small-scale aquaculture but also freshwater capture fisheries. Fifty percent of all food-fish originates from small-scale fisheries, and almost all fish from small-scale fisheries is used for food. In contrast, a substantial percentage of the catch from industrial fisheries tends to be used for animal feed and other products and not for direct human consumption.

However, since the late 1980s, population growth (outside China) has outpaced the growth of total food fish supply, resulting in a decrease in per capita fish supply from 14.6 kg in 1987 to 13.9 kg in 2001.[20] Nevertheless, the growth of fish consumption in poorer countries has increased rapidly in recent decades.[21] In particular, the consumption of freshwater fish has grown substantially, primarily in East Asia. Even if China is excluded, per

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[20] FAO, 2004 (see footnote 3).

[21] FAO Fishery Information, Data and Statistics Unit. 1999. *Numbers of fishers 1970–1997*. FAO Fisheries Circular. No. 929, Rev. 2. Rome, FAO. 108 pp. (Trilingual)

capita supply in Low Income Food Deficit Countries (LIFDCs) has increased (admittedly from a lower base than the global average) from 5.0 to 8.3 kg since 1960 – an annual growth rate of 1.3 percent.[22]

1.2.3 Contribution of small-scale fisheries to food security at national level: the issue of trade

Although very little research has been done to identify the different mechanisms that link small-scale fisheries to national food security, the productive capacity of a country to exploit its own small-scale fisheries resources is not necessarily a sufficient condition to ensure the effective contribution of fish to national food security. Consumption rates in some countries may be low due to cultural reasons, and in others large numbers of the poor may have insufficient assets to purchase or barter fish. Changes in global demand and supply mentioned above have also combined to result in significant increases in trade, driven by exports and imports from, and to, developing countries. Intra-regional trade between developing countries is expected to rise further in the coming years.[23]

If one focuses just on the *direct* contribution of fish to food security, greater exports than imports of fish and fish products can potentially mean less availability of fish for national consumption. However, the relationship between the balance of trade and food security is more complex than this due to the *indirect* contribution of exports both through resulting wages and employment, and through the foreign exchange earned at the national level that can be used for imports. There is also the need to consider food security for both *producers* and *consumers*.

With respect to the ability to import food, exports of high value fish species can enable imports of low value fish species and other food types. Analysis of the food trade for instance shows that in the year 2000, the value of fish exports in LIFDCs corresponded to 50 percent of their import bill for food. Similarly the Asian countries as a group earned enough foreign exchange from fish to finance 34 percent of their food imports in 2000. Analysis of past and projected trade trends indicates that developing countries as a

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[22] Note that per capita food-fish supply for Africa declined significantly during the 1990s (FAO, 2000).

[23] Kurien, J. (ed.). 2005. *Responsible fish trade and food security.* FAO Fisheries Technical Paper. No. 456. Rome, FAO. 102 pp.

whole have been, and are projected to remain, large net importers of low-value food fish but exporters of high-value finfish.[24]

The impacts of increasing trade on food security for the poor are not necessarily clear-cut. While low-value fish have traditionally accounted for a higher share of the animal protein consumption by the poor in developing countries, increased trade may or may not drive up local prices. What is certain is that the effects of fish trade on the price of fish is likely to be a key factor affecting the nutrition of the urban and rural poor in the future.

1.2.4 Contribution at the individual/household level

The most *direct* contribution of fishing activity to food security at the household level is through consumption of the household's catch, i.e. self-consumption. Certainly for many poor households engaged in full-time, seasonal or occasional small-scale fishing activities, such contributions are crucial to individual/household food security.

The percentage of total household catch that is consumed by the household varies greatly, however, and may depend on both the level of commercialization in the fishery and the level of poverty in the household. The extent to which poverty determines the percentage of the catch that is consumed, is complex and not always clear or well-understood. While it is often assumed that the poor consume a greater proportion of their catch, recent field research, in the Lake Chad area[25] (Béné *et al*. 2003a), has shown that the poorest households may consume a lower proportion of their catch than better-off households, and instead sell most of their fish in order to be able to purchase cheaper foodstuffs. The direct contribution of fish to food security for the poorest households may therefore be lower than generally thought, preventing these households from accessing the nutritional benefits that fish offers (see Section 1.2.1). This is particularly the case for women, because of commonly-found gender inequities in

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[24] Delgado, C.; Wada, N.; Rosegrant, M.; Meijer, S.; Ahmed, M. 2003. *Outlook for Fish to 2020: Meeting Global Demand*. A 2020 Vision for Food, Agriculture, and the Environment Initiative. International Food Policy Research Institute & WorldFish Center.

[25] Béné, C.; Neiland, A.; Jolley, T.; Ladu, B.; Ovie, S.; Sule, O.; Baba, O.; Belal, E.; Mindjimba, K.; Tiotsop, F.; Dara, L.; Zakara, A.; Quensiere, J. 2003. *Inland fisheries, poverty and rural livelihoods in the Lake Chad Basin*. Journal of Asian and African Studies, 38(1): 17–51.

access to fishery resources and to higher-margin trading activities in the post-harvest sector.

If fish (as a subsistence product for fishing households) is potentially an important source of direct food security, its contribution through both bartering and the generation of incomes derived from labour-wages and fish commercialization, can also make it an important *indirect* source of food security. Harvesting, processing and marketing fish generates livelihoods, employment and income for millions of people around the world. Although employment cannot be taken as the firm assurance of food security for these people, it should be emphasized that in a significant number of cases, small-scale fishing activities take place in rural areas[26] where alternative employment opportunities may be scarce or even non-existent. In these circumstances, access fishery resources for harvest, processing and/or trade may represent the only option available for making a living and maintaining food purchasing power.

The contributions of small-scale fisheries to food security discussed above are summarized in Table 2 of the Appendix.

[26] It is recognized however that a growing part of small-scale fisheries is now taking place in peri-urban – or even urban – zones.

2 ENHANCING THE ROLE OF SMALL-SCALE FISHERIES IN CONTRIBUTING TO POVERTY ALLEVIATION AND FOOD SECURITY

2.1 A vision for small-scale fisheries

The FAO's Advisory Committee on Fishery Research (ACFR) Working Group on Small-Scale Fisheries recently provided a vision statement for small-scale fisheries that should be supported by all States. It proposed that:

> *The vision for small-scale fisheries is one in which their contribution to sustainable development is fully realized. It is a vision where:*
>
> - *they not marginalized and their contribution to national economies and food security is recognized, valued and enhanced;*
>
> - *fishers, fish workers and other stakeholder have the ability to participate in decision-making, are empowered to do so, and have increased capability and human capacity, thereby achieving dignity and respect; and*
>
> - *poverty and food insecurity do not persist; and where the social, economic and ecological systems are managed in an integrated and sustainable manner, thereby reducing conflict.*[27]

The rest of these Guidelines provide some ideas about how this vision can be realized, and how the contribution of small-scale fisheries to poverty alleviation and food security can be enhanced.

2.2 The Code of Conduct

The importance of fisheries in poverty alleviation and food security is first acknowledged in the Code of Conduct (FAO, 1995) under the General Principles in Article 6.2:

> *Fisheries management should promote the maintenance of the quality, diversity and availability of fisheries resources in sufficient quantities for present and future generations in the context of food security, poverty alleviation and sustainable development.....*

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[27] FAO/Advisory Committee on Fisheries Research, 2004 (see footnote 7).

The contribution of small-scale fisheries is most clearly acknowledged in Article 6.18:

> *Recognizing the important contributions of artisanal and small-scale fisheries to employment, income and food security, States should appropriately protect the rights of fishers and fishworkers, particularly those engaged in subsistence, small-scale and artisanal fisheries, to a secure and just livelihood, as well as preferential access, where appropriate, to traditional fishing grounds and resources in the waters under their national jurisdiction.*

2.3 Fisheries policy in support of the poor

2.3.1 The Code of Conduct

The Code mentions the need to include all stakeholders in the policy-making process in Articles 6.13 and 6.16:

> *States should, to the extent permitted by national laws and regulations, ensure that decision-making processes are transparent and achieve timely solutions to urgent matters. States, in accordance with appropriate procedures, should facilitate consultation and the effective participation of industry, fishworkers, environmental and other interested organizations in decision-making with respect to the laws and policies related to fisheries management, development, international lending and aid.* [Article 6.13]

> [States]…*should ensure that fishers and fishfarmers are involved in the policy formulation and implementation process, also with a view to facilitating the implementation of the Code.* [Article 6.16]

2.3.2 Improving policy processes

The way that policy content is discussed and defined (i.e. the policy process) may affect how issues of poverty and food insecurity are addressed. In particular, including poor and food-insecure fishers and fishworkers in the policy process is likely to improve the potential for pro-poor content of policy. In striving to improve policy processes, States should:

- carefully assess all small-scale fisheries stakeholders that need to be involved in policy formation;

- consider the need for legislation and/or formalization of processes to ensure appropriate involvement by small-scale fisheries interests;
- allow sufficient time and financial resources to ensure wide stakeholder participation in policy development;
- formalize methods to ensure transparency i.e. full disclosure of information on the extent of the involvement by different parties, and reasons for inclusion and exclusion of particular issues in policy documents, the selection of key priorities, and the processes used;
- decentralize policy processes, to increase both the potential for involvement of small-scale fishers and fishworkers, but also accountability by bringing decision-making closer to the people;
- work with small-scale fisheries organizations to strengthen the ability of their representatives to participate meaningfully in the process;
- adapt and specify policy development tools (e.g. workshops, meetings, Participatory Rural Appraisal [PRA]) to encourage contributions to be made by small-scale fishers and other fishworkers, by catering for the different educational levels and experiences by those involved in technical issues;
- make specific use of the knowledge and experience of small-scale fishers and fishworkers;
- conduct regular reviews and analysis of policies (to assess their impacts on small-scale fisheries), and of policy processes (to assess the extent to which small-scale fisheries interests are being included); and
- consider how fisheries policy development can be linked to the specification of national poverty reduction strategies and Poverty Reduction Strategy Papers (PRSPs).

2.3.3 Specifying appropriate objectives

Policy statements should cover and provide support for four broad categories of key objectives that should be considered for inclusion in fisheries policy, relating to environmental, economic, social, and equity concerns. They are shown in in Appendix A, along with some examples of "sub-objectives", and the link that these are likely to have to increasing the

contribution of small-scale fisheries to poverty reduction, poverty prevention and food security. The four main categories of objectives may also overlap; for example, gender issues can relate both to social and equity objectives.

As Table 3 shows, appropriate policy objectives for small-scale fisheries may be numerous. There is a need to consider, *inter alia*, the following policy components for their relevance and applicability:

- involvement of small-scale fishers and fisherworkers in policy, legislation and management processes (i.e. legislation which supports co-management) (Sections 2.3.2 and 2.4.2);
- the ability to make local bylaws which can support particular local circumstances;
- processes for redress by small-scale fishers and fishworkers – e.g. the appeals process;
- facilitation of the movement of migratory fishers and access by them to fish resources (although care needs to be taken over migratory rights coming into conflict with indigenous fishing rights). Support is also required for de-facto female headed households where men are mostly absent through migration (Section 2.4.3.2);
- inclusion of small-scale fishers and fishworkers in social security schemes and ensuring that labour rights apply in the sector (Section 2.4.3.2);
- secure and fair access by small-scale fishers to coastal land and near-shore areas of sea, and management measures specifying seasonal or area restrictions for foreign and domestic industrial activity (Sections 2.7.6 and 2.7.6.1);
- security of rights by small-scale fishers and fishworkers to resources more generally. This is especially important for the poor, whose rights are often easily eroded (Section 2.7.4);
- rights of small-scale fishers to access straddling stocks, recognizing the fact that in many countries small-scale fishers now operate far offshore (Section 2.7.6);
- Community-based Fisheries Management (CBFM) (Section 2.7.4);

- minimization of bycatch and its better utilization in industrial fisheries;
- support for the small-scale post-harvest sector and ensuring access to catch by small-scale processors and traders (Section 2.8.4.7); and
- safety at sea. Small-scale fishers may be especially at risk of accidents due to the type of vessels used, low levels of profits hindering appropriate maintenance of vessels and the purchase of sea safety equipment.

2.3.4 Cross-sectoral policy

In addition to policy specifically for the fisheries sector, there are (i) cross-sectoral policies at the national level, (ii) policies in other sectors, and (iii) local policies – all of which can impact on small-scale fisheries. Those wishing to support the contribution of small-scale fisheries to poverty alleviation and food security should thus strive to engage in policy processes in other sectors.

National policies of relevance may relate to: decentralization; poverty; trade; finance and credit; migration; health and education; and co-operatives and organizations. Sectoral environmental or water policy, for example, may have implications on the sustainability of fish stocks and water levels in inland water bodies respectively, while forestry policy relating to mangroves may support or endanger the sustainability of fish stocks. Local policies on planning and infrastructure provision can act as a catalyst for small-scale fisheries if they facilitate business activity and do not disproportionately benefit the better off.

Cross-sectoral integrated planning and policy processes may be very powerful means for raising the profile of small-scale fisheries in policy arenas. Too often, however, small-scale fisheries are left out of national planning mechanisms and decision-making processes. One direct consequence is that small-scale fisheries, despite their very important potential as an entry point for poverty alleviation, are very often neglected in rural development or poverty reduction initiatives. Cross-sectoral issues and solutions are covered in more detail in Section 2.6.

2.3.5 Recognizing policy trade-offs

Policy conflicts can take the form of conflicts: (i) between objectives (e.g. environmental, economic, social, and equity as presented in the Appendix;

(ii) within sectors (e.g. large- vs small-scale fishers); or (iii) between sectors (e.g. between fisheries and other sectors).

Conflicts between *objectives* may include, for example:

- equity versus efficiency (some policies may support management regimes that directly trade off efficiency against equity, where the efficiency gains are not equitably distributed);

- support for exports as opposed to production for the national market (increasing exports to increase revenues and enhance foreign exchange earnings may lead to a decrease in availability of fish for sale in local markets); and

- short-term versus long-term objectives (short-term objectives of reducing poverty, maximizing employment and/or improving food security may be felt to be politically necessary, but may have a negative impact on long-term sustainability of the resource and/or economic efficiency of the sector).

Also of importance are two main types of *user conflict* at the sector level or between fisheries and other sectors. Within fisheries, conflicts arise not only between industrial and small-scale fisheries interests, but also among different small-scale gear users exploiting the same resource. These latter may include, for example, beach-seine fishers vs. canoe fishers operating in coastal waters, or small-scale fishers fishing for reef fish vs. divers collecting ornamental fish. In terms of fisheries and other sectors, conflict is perhaps most common over land use, and to a lesser extent, access to inshore coastal waters. Such resources in coastal zones are often in high demand by fishers, for tourism, and for other uses and forms of development, and require careful management and planning if conflict is to be avoided.

Because of the importance and prevalence of conflicts, States must explicitly recognize and confront trade-offs and conflicts at the planning/policy stage, while recognizing that to some extent conflict may be inherent. Attempts should be made to assess the costs and benefits of different policy options, and this requires good information on which to assess trade-offs that might need to be made. Importantly, assessment of the costs and benefits must recognize that policies have distributional impacts. They may create “winners” and “losers”. Each policy objective and decision should be assessed in terms of its impact on the poor through direct and

indirect impacts within fisheries and in other sectors. The need to balance both quantifiable and non-quantifiable elements can make such an assessment difficult, but the political will to prioritize between competing objectives/users is an important first step.

2.4 Legislation in support of the poor

The poor are frequently unable to induce changes that would benefit them, due to their economic, social and political marginalization. The low level of assets of the poor, and entrenched power structures and economic relationships working against them, can conspire to ensure that without protection and special assistance through legislation, the poor are likely to remain poor. Importantly, legislation is often not neutral in its impact on different socio-economic groups, and regulatory frameworks and legislation may not favour the poor unless legislation is specifically pro-poor in its definition and implementation.

2.4.1 The Code of Conduct

Two of the Code's ten core objectives deal specifically with legislation. Thus, the Code should

> *establish principles, in accordance with the relevant rules of international law, for responsible fishing and fisheries activities, taking into account all their relevant biological, technological, economic, social, environmental and commercial aspects* [Article 2a];

and

> *serve as an instrument of reference to help States to establish or to improve the legal and institutional framework required for the exercise of responsible fisheries and in the formulation and implementation of appropriate measures* [Article 2c].

Article 3 requires that the Code be interpreted and applied in conformity with the 1982 UN Convention on the Law of the Sea (Article 3.1), and in a

manner consistent with the 1995 UN Fish Stocks Agreement (1995)[28] (Article 3.2a). Given that the Code was developed prior to the international declarations and commitments on poverty alleviation and food security mentioned in the introduction, it does not specifically mention them. However, Article 3 stresses that the Code should be interpreted and applied "in accordance with other applicable rules of international law, including the respective obligations of States pursuant to international agreements to which they are party" (Article 3.2b) and "in light of the 1992 Declaration of Cancun, …and other relevant declarations and international instruments" (Article 3.2c). Article 3 therefore requires that the Code should be interpreted and applied as such international declarations and international instruments evolve, including the recent commitments by States on poverty alleviation and food security.

Article 6.13[29] of the Code is also important in that it encourages the participation of "*…industry, fishworkers, environmental and other interested organization in decision-making with respect to the development of laws and policies related to fisheries management, development, international lending and aid*."

Other relevant Articles of the Code relating to legislative issues include: 7.1.1, 7.6.6, 7.7.1, 8.3.1, 9.1.1, 10.1.1, 10.1.3, and 10.2.5. Article 11.3 also has eight sub-articles on laws and regulations relating to fish trade, all of which have implications for small-scale fisheries.

2.4.2 Ensuring that the process of law making is participatory

As with policy, small-scale fishers and fishworkers must be included in the *process* of developing legislation (both within fisheries and in other sectors), even if the process is prolonged. Only by doing so can it be hoped that conflicts will be minimized and that legislation will really address the needs and potentials of poor small-scale fishers and fishworkers and have a measure of legitimacy. This involvement must take place both at all levels, national and local, at which laws and by-laws are formulated. Participation can be facilitated through similar means to those presented in Section 2.3.2.

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[28] The full title of which is: Agreement for the Implementation of the Provisions of the United Nations Conventions on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

[29] See Section 2.3.1.

2.4.3 Important areas of legislation

2.4.3.1 Fisheries legislation

Legislation on small-scale fisheries is unlikely to exist in isolation from general fisheries legislation. However, there may be specific regulations, orders etc., focusing on small-scale fisheries, and issues of small-scale fisheries can be included in overall fisheries legislation.

Given that many small-scale fishers and fishworkers are poor, legislation to support small-scale fisheries is very often by implication "pro-poor". Legislation pertaining to industrial fisheries (e.g. area or seasonal bans) may also have a significant benefit for small-scale fisheries reflecting the linkages between the two subsectors, and provides potential mechanisms for assisting small-scale fisheries.

How small-scale fishers are defined in legislation is important, and has potentially significant gender impacts. States should ensure that the definition of small-scale fisheries is broad and includes shore-based work. It should include, for example, processing and marketing activities where typically women are more active, in addition to capture fisheries. A failure to do so has implications in terms of such work not being formally recognized, with related impacts and constraints on accessing financial assistance, membership of unions or organizations, and the protection of rights.

Section 2.3.3 above presented some ideas for pro-poor policies, and all of these issues may need to be legislated for to ensure that certain *rights* are enshrined in law for small-scale fishers and fishworkers so that they cannot be eroded through social, economic and political marginalization. Particular attention should also be given to the identification of all *existing* rights before new legislation is developed and enforced.

2.4.3.2 Non-fisheries specific legislation

Human rights

States should consider legislation in support of the various international conventions on: right to food; women's rights; the right to earn a living; the right not to be discriminated against; the right to education; and other

human rights.[30] All such rights are likely to result in pro-poor and/or food-secure outcomes given that anyone lacking such rights can be considered poor under the recent broadening of the poverty concept. National legislation can give effect to such rights either through specific legislation on issues which will support such rights, or through enshrining such rights in constitutions, to which all national legislation is subsidiary. With respect to Article 3 of the Code, it is worth noting that a State only has an obligation to comply with an international commitment (e.g. to reducing poverty or food insecurity) if the commitment is in a binding international agreement or part of international law. But States can of course also look to international agreements that they are not party to, as well as to voluntary instruments or practices, to help them develop legislation.

Migration, transboundary issues, social security and workers rights

Non-fisheries specific legislation on issues of migration are important in many small-scale fisheries, especially in Africa where migration of fishers and fishworkers is common, but also in other regions. Fishers and fishworkers may need or want to migrate to reduce vulnerability to natural factors (e.g. stock variations), or as a coping mechanism following a crisis or shock to household or individual livelihoods. Migration may also be used as a pro-active strategy to accumulate capital. The ability to migrate may need to be facilitated through legislation, but perhaps more important is the need to ensure that when operating in an area or country that is not their own, fishers and fishworkers are afforded rights of access to social support, health care, and education.

However, issues of access to social security need not, and indeed should not, be confined to migratory fishers. Legislation should ensure that small-scale fishers and fishworkers receive the same access to, and coverage under, insurance schemes, pensions, and unemployment benefits as other

[30] The Universal Declaration of Human Rights of 1948, for example, asserts in Article 25(1) that "everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food". In 1999 the UN Committee on Economic, Social and Cultural Rights released its General Comment 12 on the human right to adequate food, which makes it obligatory for governments to respect and protect the human right to adequate food and facilitate people's access to food. In 2004, the FAO Council adopted Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security.

sectors of the economy. The issue of workers rights and labour law is also an area usually dealt with outside of fisheries legislation. It is important for those working in processing factories (usually women), as well as for men in capture fisheries, to be covered under national laws, rather than being considered a "special case" given the nature of the work in terms of its hours and conditions, with a resulting lack of legal protection.

Decentralization and participatory governance

The increasing importance of decentralization in many regions of the world is worthy of special mention in the legislative context. It is important in bringing decision-making closer to the poor and therefore increasing the likelihood of success of pro-poor policies and programmes, as well as for Community-based Fisheries Management mentioned in Section 2.3.3 and Section 2.7.3. Decentralization needs to be underpinned by legislation supporting local entities in decentralization reforms, through appropriate transfer of powers.

In many developing countries, legislation supporting decentralization is already in place. What is equally important is ensuring that such legislation can be backed-up and implemented through appropriate decentralized governance structures, and that it does not conflict with existing hierarchical structures and mandates of different groups or levels of government.

2.5 Implementation issues

Both policy and legislation are only as good as the extent to which they are implemented and enforced. Indeed, all the recommendations and suggestions made throughout these Guidelines are worthless if not implemented. This section, therefore, considers some of the generic requirements to ensure that such implementation is successful.

2.5.1 Human capacity development

Human capacity development is essential for effective implementation, and can be defined as:

> …the process by which individuals, groups, organizations, institutions, and societies develop their abilities – both individually and collectively – to set and achieve objectives, perform functions,

> solve problems and to develop the means and conditions required to enable this process.[31]

The definition serves to highlight two important attributes of capacity development. Firstly, it requires consideration at *different levels*, each of which represents a level of analysis, and importantly, a possible entry-point for initiatives aimed at capacity development. Secondly, it is not a passive state. In order to build capacity, a *process* must take place for individuals, whether they are acting on and influencing just their own activities, or are doing so as part of institutions, sectors, or society more generally.

Past approaches to capacity development, both in fisheries and other sectors, have tended to focus primarily on technical support through skills-based training to individuals, and through institutional strengthening. Lessons from previous activities suggest that, to be more effective, human capacity development initiatives should:

- focus on all the different levels requiring capacity development;
- pay more attention to non-sector specific knowledge and skills such as business management, socio-economics and good governance, as well as to fisheries-specific skills;
- be more participatory in their needs assessment and design, implementation and monitoring;
- build on core-capacities and be a two-way process of knowledge transfer;
- provide for flexible and suitable learning pathways to meet the needs of individuals;
- take greater cognizance of the overall societal/political context in which they operate;

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[31] FAO. 2004. *Strategy for human capacity development*. (ACFR/WP/HCB/I/3). The Strategy provides a practical checklist for individual capacity development initiatives and covers topics such as capacity needs assessment, training needs analysis, curriculum development, delivery, and monitoring and evaluation.

- be based where possible on regional networks for addressing common issues and promoting self-reliance through regional capacity development;
- be based on tailored delivery mechanisms, through a participatory process, to ensure they meet the particular needs, capabilities and funding of the recipients, with appropriate matching to service providers;
- recognize that those delivering capacity development may themselves require development for effective delivery; and
- be based on an improved understanding of capacity-development "success" and its measurability, to ensure that initiatives build upon prior experience and lessons learned.

Especially important at the organizational, institutional and individual levels is the need to: (i) train and fund more fisheries experts specializing in small-scale fisheries in fisheries departments and ministries, donor agencies, and NGOs; (ii) place a greater emphasis on social, economic, and livelihoods analysis skills in such organizations; and (iii) enhance the capacity in organizations representing and working for small-scale fisheries – e.g. those concerned with technical fisheries management issues, social welfare, credit/savings and marketing, and political negotiation or lobbying.

2.5.2 Importance of information

It should be stressed that one does not need perfect information in order to take concrete steps to increase the contribution of small-scale fisheries to poverty alleviation and food security. The suggestions provided in these Guidelines provide a first step in making accessible what is already known, in order to inform immediate decision-making and action. However, it is also true that better information and communication systems are certainly required to ensure that future actions are increasingly successful in achieving their objectives. Issues of information, communication and research are dealt with in more detail in Section 2.10, and it is sufficient here just to note their importance as background to successful implementation, and in justifying financial support to small-scale fisheries based on their contribution to poverty alleviation and food security.

2.5.3 Need for appropriate funding

In some cases States can retain funds generated within the sector, for subsequent use within it. However, it is more normal for national treasury

rules to require all revenues to be deposited with the treasury. If so, then it is important that Ministries of Finance and national treasuries, recognizing the importance of small-scale fisheries as outlined in Section 1, ensure sufficient and specific budget allocations if strategies outlined in these Guidelines are to be successfully implemented.

In ensuring funds to support small-scale fisheries, it is also necessary to look outside of fisheries sector budgets. At the national level, ensuring the inclusion of small-scale fisheries in national poverty reduction strategies, for example, can help access poverty-related funding. Support for small-scale fisheries can also be provided indirectly at the local level, for example, through adequate finance for local councils or NGOs working in fisheries and more generally in rural development. Decentralized management of funds may help to enhance their effectiveness in supporting the small-scale sector.

2.5.4 Inclusion of civil society and users, and participation and empowerment of communities

Government policy and involvement in the implementation of appropriate strategies and initiatives are of course important. But without participation by, and empowerment of, both small-scale stakeholders and civil society, success is likely to be limited. Increasingly States are recognizing the need to work with local NGOs and small-scale stakeholders, and to adopt participatory approaches to design and implementation based on good consultation. Devolving management responsibility to the local level, for example, may not be sufficient to ensure the interests of the poor are adequately represented. “Communities” are usually stratified by wealth and power, with local elites and decentralized governments sometimes colluding to exclude the less powerful. Civil society organizations (including fishers’ cooperatives, NGOs, media, etc.) often champion the role of the poor, and fisheries development programmes should examine ways in which “traditional” leadership, local government and civil society can work together to ensure that the interests of poorer and marginalized groups are taken into account in decentralized resource management.

Such consultation increases the likelihood that initiatives will meet the needs of the poor. It also increases the likelihood of civil society and small-scale fishers and fishworkers becoming more visible at the national level, by increasing their ability to engage with the private sector, governments and donors.

Community development and empowerment through the provision of education, social services, welfare and health improvements, are all important in ensuring that the contribution of small-scale fisheries to poverty alleviation and food security is increased, and that fisheries-specific strategies aimed at doing so are likely to be successfully implemented.

2.6 Cross-sectoral considerations

These Guidelines contain a number of references (e.g., Section 2.3.4) to the importance of cross-sectoral approaches to fisheries problems, and to increasing the contribution of small-scale fisheries to poverty alleviation and food security. Because of the importance of such approaches and solutions, this section specifically addresses them, and related recommendations, in a little more detail.

2.6.1 The Code of Conduct

Article 10 of the Code is of particular relevance to cross-sectoral issues. It makes explicit reference to the integration of fisheries into coastal area management:

> *States should ensure that an appropriate policy, legal and institutional framework is adopted to achieve the sustainable and integrated use of the resource, taking into account the fragility of coastal ecosystems and the finite nature of their natural resources and the needs of coastal communities* [Article 10.1.1].
>
> *In view of the multiple uses of the coastal area, States should ensure that representatives of the fisheries sector and fishing communities are consulted in the decision-making processes and involved in other activities related to coastal area management planning and development* [Article 10.1.2].

The need to consider cross-sectoral solutions for inland (full-time and other "seasonal" or "occasional") fisheries and inland water management plans is not explicitly dealt with in the Code, especially with respect to the question of multiple uses of, and competition for, inland water resources. However, the "Code is global in scope…" (Art. 1.2) and "…*provides principles and standards applicable to the conservation, management and development of all fisheries*" (Art. 1.3). The principles that apply to coastal areas, therefore, also apply to the catchment areas of inland waters.

2.6.2 Recognizing the rural poverty context and the multi-use nature of resources

Seventy percent of the poor in the world live in rural areas, and a large majority of small-scale fishers and fishworkers are rural dwellers. As a consequence, fishers and fishworkers are affected by the geographical isolation and low or poor provision of public infrastructure and services (lack of roads, hospitals, schools, market facilities, etc.) associated with many rural areas.[32] Thus, improving the livelihoods of fishers and fishworkers through non-fishing initiatives (health, literacy, etc.) may be at least as important as fisheries-specific solutions. Integrated rural development initiatives aimed at creating or strengthening cross-linkages between literacy, housing, social security, health, infrastructure, etc. can have significant positive impacts on the livelihoods of small-scale fishers. Identified priority cross-sectoral issues to address in fishing communities include:

- Ensuring the contribution of the fisheries sector is adequately represented in national poverty reduction strategy plans (PRSPs) and other high-level development planning and funding-allocation mechanisms.

- Ensuring that fisheries sector concerns are given appropriate attention in local or district planning processes. At local government level, fisheries have recently been seen more as a source of taxation revenue to fund government expenditure, but less as a target for government expenditure programmes. Given the poverty and vulnerability found in fishing communities, this needs to be addressed by ensuring a proportion of the revenue collected is earmarked for expenditure on fishing community needs.

- Responding to issues of political and social marginalization in fisheries, such as a lack of legal recognition of temporary fishing camps and other unofficial settlements, and consequent lack of provision of government services such as water, sanitation, health,

[32] It should be noted, however, that not all poor and vulnerable fishing communities are located in rural areas. Poor and marginalized small-scale fishers and fishworkers can also be found in, or on the edge of, many urban or peri-urban areas, and may be susceptible to displacement as urban areas develop and expand.

security and access to justice systems. These factors make fishing livelihoods vulnerable and reduce the potential contribution of fisheries to food and livelihood security and economic growth.

- Responding to the often exceptionally high incidence of HIV/AIDS in fishing communities by priority targeting of appropriate HIV prevention and AIDS impact mitigation strategies. High rates of HIV/AIDS have wide-ranging implications for the contributions of the fishery sector to food and livelihood security and provide a potential threat to the concept of responsible fishing.[33]

Section 2.3.5 noted that small-scale fishers, both in coastal and inland areas, usually compete with other users for the resource itself (e.g. with industrial large-scale fisheries), but also very frequently for coastal land and the water from which the resource is extracted (e.g. with irrigation schemes and hydro-power dams in the case of inland fisheries, and marine parks, tourism activities and general coastal development in the case of inshore fisheries). This multi-use, multi-user characteristic is a key factor greatly affecting the livelihoods of fishing communities, through increasing competition for water and coastal resources. Once again, what is required is cross-sectoral planning and conflict resolution to manage sectors, including aquaculture, in an integrated manner.

Coastal small-scale fisheries have suffered from cross-sectoral interactions in recent decades. But their status has been – at least to some degree – increasingly acknowledged by those engaged in integrated coastal area management. The presence of Articles 10.1.1 and 10.1.2 of the Code, mentioned above, reflect this growing acknowledgement. The FAO Guidelines on the integration of fisheries into coastal area management[34] are clearly of relevance in this regard, as are the FAO Guidelines on the ecosystem approach to fisheries.[35] The status of inland (full-time and other

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[33] Allison, E.H. and Seeley, J.A. 2004. *HIV and AIDS among fisherfolk: a threat to "responsible fisheries"?* Fish and Fisheries 5(3): 215-239.

[34] FAO Fishery Development Planning Service, Fisheries Department. 1996. *Integration of fisheries into coastal area management.* FAO Technical Guidelines for Responsible Fisheries. No. 3. Rome, FAO. 17 pp.

[35] FAO Fisheries Department. 2003. *Fisheries management. 2. The ecosystem approach to fisheries.* FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2. Rome, FAO. 112 pp.

"seasonal" or "occasional") fishers, who represent probably more than 100 million people in the world (although the exact number is unknown), should also be considered in inland water management plans, especially with respect to the question of multiple uses of, and competition for, inland water resources.

2.6.3 Recognizing the complexity and range of livelihood strategies and coping mechanisms

Supporting and encouraging fishers and fishworkers to engage in livelihoods in other sectors (either to complement or curtail fishing activities) is important, especially in order to reduce vulnerability. Lessons from recent initiatives suggest that choosing appropriate alternative livelihoods is not simplistic, and requires very careful assessment of existing livelihoods strategies, the assets of the poor, specific vulnerabilities and sources of risk, attitudes, and coping mechanisms.

Support for coping mechanisms (including the use of alternative livelihoods) to deal with vulnerability and uncertainties can also be provided. Such coping mechanisms include both *ex-ante* risk management measures – i.e. pro-active initiatives in advance, and those that are *ex-post* coping mechanisms that attempt to facilitate a move back out of poverty – i.e. reactive initiatives following some unforeseen shock to or crisis for the household strategy.

Ex-ante and *ex-post* strategies employed by fishing and fisheries-related households to deal with vulnerability are summarized in in Table 4 in Appendix A, and are divided into strategies that take place within the fishing sector, and those that involve activities outside of it. It is interesting to note that in general, risk management mechanisms display "positive" characteristics, while many of the measures taken after a shock or crisis have more "negative" social and environmental implications. In addition, while the diversified livelihoods of many fisherfolk are indicators that they are able to engage in different activities when these are available, not all diversification is positive and accumulative. The unskilled, for example, may find themselves in "poverty traps" where they diversify into a range of marginal activities in order to piece together a livelihood.

2.7 The contribution of fisheries management

Fisheries management is potentially of great importance to the goal of enhancing the role of small-scale fisheries in poverty alleviation and food security. Improved management practices can contribute to this goal both directly, through increasing the share of the benefits that accrue to small-scale fishers, and indirectly, through increasing the overall benefits that accrue to society.

Because fisheries management is extensively discussed in the FAO Technical Guidelines No. 4 and other key documents (see Box 2), the topic need only be reviewed in summary fashion here.

Box 2: Key FAO Fisheries Technical Guidelines and Technical Papers on Fisheries Management.

The Guidelines and Technical Paper listed below are a small selection from those available on fisheries management from FAO. Full texts are accessible electronically by searching the FAO Document Repository at: http://www.fao.org/icatalog/inter-e.htm

FAO Fishery Resources Division and Fishery Policy and Planning Division. 1997. *Fisheries management.* FAO Technical Guidelines for Responsible Fisheries. No. 4. Rome, FAO. 82 pp.

FAO Fisheries Department. 2003. *Fisheries management. 2. The ecosystem approach to fisheries.* FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 2. Rome, FAO. 112 pp.

Cochrane, K.L. (ed.). 2002. *A fishery manager's guidebook. Management measures and their application.*. FAO Fisheries Technical Paper. No. 424. Rome, FAO. 231 pp.

A large proportion of fish stocks around the world, including those targeted by small-scale fisheries in developing countries, are either fully exploited or overexploited. As a result, potential nutrional, income, and employment benefits are already being lost and failure to introduce effective fisheries management systems will almost inevitably lead to further losses of benefits and make recovery all the more problematic. Responsible fishing requires optimizing the benefits that can be gained from the resource for society as a whole.

2.7.1 The Code of Conduct

The first paragraph of the Code's Preface sets the context for fisheries management when it states that: "…aquatic resources, although renewable, are not infinite and need to be properly managed, if their contribution to the

nutritional, economic and social well-being of the growing world's population is to be sustained".

Article 7 of the Code, which deals explicitly with fisheries management, arguably carries the Code's central message:

> *States and all those engaged in fisheries management should, through an appropriate policy, legal and institutional framework, adopt measures for the long-term conservation and sustainable use of fisheries resources. Conservation and management measures…should be based on the best scientific evidence available and be designed to ensure the long-term sustainability of fishery resources at levels which promote the objective of their optimum utilization and maintain their availability for present and future generations; short-term considerations should not compromise these objectives* [Article 7.1.1].

Article 7.2, in elaborating on the objectives of management, states that management measures *inter alia* should provide that:

> … *the interests of fishers, including those engaged in subsistence, small-scale and artisanal fisheries, are taken into account* [Article 7.2.2c].

Fisheries managers frequently face difficult dilemmas when attempting to encourage implementation of particular measures. They are called upon to weigh up opposing sets of issues and assess the degree of risk involved in the decisions they make. There are times when the "best scientific evidence available" points to the need for a reduction in the catch in circumstances where strong social and economic pressures are exerted to maintain or even increase the catch. Yet putting the resource at risk for "short-term considerations" could well worsen the position of the poor in the medium and longer term. Thus, in making decisions that involve the sustainability of the fisheries, managers should explore all other possible ways of ameliorating social and economic pressures before making decisions to risk the aquatic resources on which the poor depend.

2.7.2 What does fisheries management entail?

In the absence of a clear and generally accepted definition of fisheries management, the FAO Technical Guidelines[36] use the following "working definition".

> *The integrated process of information gathering, analysis, planning, consultation, decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities in order to ensure the continued productivity of the resources and accomplishment of other fisheries objectives*.

Fisheries management is about mediating the interaction between people and resources. It entails a complex and varied set of tasks aimed, ultimately, at ensuring that optimal benefits accrue from the use of fisheries resources.

Demand for fisheries resources in the vast majority of cases now exceeds the productive capacity of aquatic ecosystems. This creates conditions where, without management (i.e. without limiting the catch), fish stocks are easily overfished and, as a consequence, ecosystems degraded and the potential wealth associated with fisheries resources dissipated.

2.7.3 Who are the managers?

Fisheries management should not be looked upon as a hierarchal activity involving "managers" and "the managed". It is now well established that when fishing communities are involved in the formulation of policy and in the decisions regarding management measures and their implementation and regard these policies and decisions as their own, regulations gain considerable legitimacy. The likelihood of achieving compliance with regulations is therefore enhanced.[37]

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[36] FAO Fishery Resources Division and Fishery Policy and Planning Division. 1997. *Fisheries management.* FAO Technical Guidelines for Responsible Fisheries. No. 4. Rome, FAO. 82 pp.

[37] FAO, 1997 Section 3.2 (see footnote 36).
Cochrane, K.L. (ed.). 2002. *A fishery manager's guidebook. Management measures and their application.* FAO Fisheries Technical Paper. No. 424. Rome, FAO. 231 pp. (Chapter 7).

Participatory "control-with-consensus" systems are an attractive alternative to the more expensive "top-down" coercive approach to regulation.[38,39] They are more cost-effective and they are far more likely to capture the complex array of social, economic, biological and ecological issues that need to be considered for effective fisheries management.

The implications of this are that a wide range of stakeholders are likely to participate in exercising the fisheries management function, and share the responsibility and authority to undertake the complex and varied set of tasks that constitute this function.[40] Such arrangements are generally referred to as co-management.

Co-management has been promoted essentially as a governance reform aimed at improving the efficiency and the sustainability of the sector. Arguments in favour of co-management are, however, not only based on considerations of economic efficiency or ecological sustainability. Co-management is also expected to promote improvements in public accountability and to foster empowerment of poor and vulnerable groups.

In developing and implementing such a management system, a number of necessary, but not always sufficient, conditions to improve chances for co-management reforms can be identified. These include:

- explicit recognition of the political dimension of co-management and the reallocation of power and responsibilities through enabling policies and legislation;
- ensuring financial sustainability beyond donor intervention;
- co-management objectives defined by stakeholders and not simply imposed by outside agencies;
- strong central government capacities;
- cooperation of and support of, but not domination by, local government and local political elite;

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[38] Flewwelling, P.; Cullinan, C.; Balton, D.; Sautter, R.P.; Reynolds, J.E. 2002. *Recent trends in monitoring, control and surveillance systems for capture fisheries.* FAO Fisheries Technical Paper. No. 415. Rome, FAO. 200 pp.

[39] Lipton, M. (ed.). 1985. The prisoners' dilemma and Coase's theorem: A case for democracy in less developed countries? Economy and Democracy, MacMillan Press Ltd.

[40] FAO, 1997 (see footnote 36).

- capacity building of both community and supporting local government agencies;
- adoption of a gender-balanced perspective, and acknowledgement of the position of women both within the community and within the sector;
- the ability of grassroots organizations and NGOs to have a positive influence over co-management, but a recognition that their involvement may not be "value-neutral"; and
- recognition that not everyone in a community will have the same interests and the same capabilities.

2.7.4 Ending open access – the assignment of rights

Once demand in a fishery exceeds the productive capacity of the stocks, there is a need to limit, in some way, the harvesting of those fishery resources. This means placing some limits on fishing, that is, either on the catch or on effort – the combination of people, boats, fishing gear, and ancillary equipment needed to harvest the fish. In essence, it means an end to free and open access. It means that some people (whether collectively or individually), using a combination of equipment, will have the right to fish while others will be excluded.[41] A "right" is a claim to a benefit (or a stream of benefits) where there is the capacity to insist that others respect it.

Recognizing the existing rights of fishing communities is a fundamental element in building a successful fisheries management system. Doing so provides a basis of legitimacy, which can significantly enhance system compliance.

A system of community rights-based management, which protects the rights of access by poor small-scale fishers, is likely to be the best pro-poor arrangement in many small-scale fisheries. By restricting the access to the

[41] Another option, which might be biologically successful, is to place the same limits on everyone who wishes to fish (e.g. establish a total allowable catch and when it is reached, the fishing season closes). However, unless this approach is accompanied by appropriate fishing rights, it does not alter the incentive for fishers to catch as much as possible before others do so and, in the longer term, it leads to excessive fishing capacity and economic disaster.

resources to a well-identified group,[42] community property rights help to reduce the risks of overfishing, thus preventing the fishers from falling into the downward spiral of poverty and resource overexploitation associated with open access regimes. At the same time the fact that these property rights are granted to groups rather than to individuals may ensure a certain level of equity within the community by allowing all members (including the poorest) to access the fishing grounds and therefore to rely on fishing to sustain their livelihoods. The concept of community property rights is therefore particularly attractive from a poverty alleviation perspective in the context of small-scale fisheries in developing countries. It has been further contended that the introduction of individual property rights would be likely to increase conflicts and inequality and decrease access for the poor.[43]

The allocation of harvesting rights also has implications for allocation of the catch to the post-harvest subsector. The catch harvested by small-scale fisheries would tend to be delivered to small-scale fish processors.

2.7.5 Policies, goals and operational objectives

A policy can be defined as "a course of action …adopted by those with responsibility for a given area and expressed as formal statements or positions".[44] Fisheries management needs to be proactive, which requires explicit clarification of what is hoped will be achieved. The principal goal of fisheries management is the long term, optimal and sustainable use of fisheries resources.[45] However, a national fisheries policy describes in general terms what is meant by optimizing the benefits from each fishery.

The goals of fisheries management may be divided into four subsets:

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[42] Such management should recognize that fishing communities may be "diffuse" entities, both temporally and spatially, and that issues of community membership and legitimacy are paramount in the consideration of how rights are allocated and defended among user groups.

[43] Viswanathan, K.K. 2000. Community perspectives – Exclusivity of rights. In: Shotton, R. (ed.) *Use of property rights in fisheries management. Proceedings of the FishRights99 Conference. Fremantle, Western Australia, 11–19 November 1999. Mini-course lectures and core conference presentations.* FAO Fisheries Technical Paper. No. 404/1. Rome, FAO. pp. 307–315

[44] FAO/SIFAR. 2003, A feasibility study for a programme on strengthening fisheries management in ACP countries: a sectoral approach. Rome, FAO.

[45] Cochrane, 2002 (see footnote 37), p. 8.

- social (e.g. maximizing employment opportunities and ensuring food security for small-scale fishing communities);
- economic (e.g. maximizing net incomes for small-scale fishers and fishworkers);
- biological (e.g. ensuring that the biomass of target fish stocks are maintained at or above a certain level approximating an optimum level of biomass); and
- ecological (e.g. minimizing impacts on habitats).[46]

The goals need to be clearly articulated and translated into operational objectives before it becomes possible to plan how they might be realized. A useful guide to developing operational objectives from high-level policy goals is described in FAO Technical Guidelines on "The ecosystem approach to fisheries".[47]

2.7.6 Management plans, strategies and measures

Management plans, strategies and measures are terms given to practical ways of explicitly formulating what needs to be achieved and how it is to be done.

A fisheries management plan is defined in the Technical Guidelines on Fisheries Management as:

> *… a formal or informal arrangement between a fishery management authority and interested parties which identifies the partners in the fishery and their respective roles, details the agreed objectives for the fishery and specifies the management rules and regulations which apply to it and provides other details about the fishery which are relevant to the task of the management authority.*[48]

A management strategy is the full set of management measures to be adopted to achieve the set of identified goals. The management measures

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[46] FAO, 1997 (see footnote 37), pp. 6–19.
[47] FAO, 2003 (see footnote 35), Section 4.1.
[48] FAO, 1997 (see footnote 36), p. 58.
See also, Cochrane, 2002 (footnote 37), Chapter 9.

are the specific controls decided for the fishery and may include technical measures, including closed areas and seasons,[49] input and output controls.[50]

When designing management measures, it might be appropriate to consider those which provide exclusive or preferential access for small-scale fisheries. Zoning, for instance, could favour and protect access to the resource by small-scale fishers, amongst whom the poorest are likely to be found. Such zoning normally would be based on gear and/or boat size, and/or an assumption that small-scale fisheries may not use a particular type of gear – e.g. trawls.

A further pro-poor measure would be to recognize that offshore fisheries should not be reserved exclusively for industrial fisheries. Small-scale fishers are moving further offshore, as inshore fisheries resources come under pressure and as the characteristics of their vessels (e.g. motorization) change to increase their fishing range.

Indeed, the importance of small-scale deep-sea fishing is becoming more widely recognized.[51] These fisheries occur on the continental shelf break or slope where the shelf is relatively narrow and accessible by fishers using small boats and drop lines. The limited size of these fish habitats means that stocks are often relatively small and are of low productivity. They are thus particularly vulnerable to overexploitation and rapid depletion. Industrial vessels using more damaging gear, might well overexploit a resource that could provide the basis for a sustainable fishery for the small-scale subsector.

It should not be assumed that industrial vessels are necessarily more efficient than small-scale vessels. When choices are made, the return on capital and labour needs to be carefully assessed. Evidence suggests that the small-scale subsector under certain circumstances may operate more

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[49] FAO, 1997 (see footnote 36), Section 3.1.1.
See also Cochrane, 2002 (footnote 37), Chapter 3.

[50] FAO, 1997 (see footnote 36), Sections 3.1.2 and 3.1.3.
See also Cochrane, 2002 (footnote 37), Chapter 4.

[51] A workshop on the "Management of small-scale deepwater fisheries" was one of four held in conjunction with the Deep Sea 2003 Conference (FAO. 2005. *Report on DEEP SEA 2003, an International Conference on Governance and Management of Deep-sea Fisheries. Queenstown, New Zealand, 1–5 December 2003*. FAO Fisheries Report. No. 772. Rome, FAO. 84 pp.).

efficiently than the industrial sector.[52] Promoting the small-scale over the industrial subsector may bring efficiency gains for the fisheries as a whole in addition to social benefits for the small-scale subsector.

There are specific current fisheries management issues which should be considered, both because of their potential to be pro-poor and pro- small-scale, but also because of their popularity and to ensure that they don't become anti-poor and/or anti- small-scale in their impacts.

2.7.6.1 Protected areas and resource enhancement

Over the last decades, the concept of protected areas, covering specially regulated areas where some extractive activities are allowed as well as areas in which all such activities are prohibited, has received attention from both scholars and practitioners as a tool for resource conservation and ecosystem protection. More recently, marine reserves (fish sanctuaries, fishery reserves, no-take areas) have also been strongly advocated as beneficial instruments for fisheries management. Although there are still some technical debates about their implementation, the ecological and conservation effects of protected areas on the populations they enclose and sometimes on the surroundings, are now well established. Their positive effect on fisheries, however, particularly at the whole fishery level and in socio-economic terms, is more often inferred than demonstrated and has still to be generally established. It is progressively being agreed, however, that if properly designed through a comprehensive scientific and participatory process, with due account of social and economic implications, protected areas (or reserves) might play a useful role, especially for coastal, small-scale fisheries that are multi-gear, multi-species and/or involve primarily sedentary stocks. Such protected areas can therefore contribute to long-run poverty alleviation through the improvement of the resource-base on which fishers and the rest of the community rely for their livelihoods e.g. through fishing, and/or local (eco)tourism.

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[52] Few studies have analysed the comparative performance of small-scale and large-scale fisheries. One of the first detailed studies concluded that value added per unit of capital investment, and energy consumption per unit of fish harvested, small-scale fisheries, on average, performed better than industrial fisheries (Kurien and Willmann, 1982; see footnote 5). As the study was conducted prior to the motorization of small-scale fisheries, these findings would have to be verified for current conditions. Another example of such work was carried out on Lake Tanganyika in East-Central Africa in the late 1980s.

However, while protected areas have been shown (in the right conditions) to improve the long-term sustainability of the resource, in the short-term the creation of these protected areas may be at the expense of some marginalized or vulnerable groups who are denied access to the fishing grounds on which they used to rely to maintain their livelihoods, aggravating their difficulties, increasing costs and risks, including to their lives, as they are pushed to fish farther away from their homes. Assessing the distributional impacts of such measures, and considering the extent to which protected areas should allow poor fishers and/or certain types of small-scale gear to extract resources from them, should therefore remain one primary consideration in the creation of protected areas. Given that many such areas are often specified unilaterally by environmental ministries and departments, this requires fisheries departments to engage with other organizations so that such issues are fully assessed. Ultimately, there are no reasons why properly designed protected areas could not become fully integrated fishery management instruments.

2.7.6.2 Assessment and management of overcapacity and IUU

Concern over issues of fleet overcapacity and IUU (illegal, unreported and unregulated) fishing tends to concentrate on industrial fishing. However, it should be noted that such issues also apply to, and affect, the sustainability and economic efficiency of small-scale fisheries, reducing or even jeopardizing their capacity to contribute to poverty alleviation.

One important consideration needs to be made in this regard: due to the nature of small-scale fishery activities (as part of a multi-activity livelihood strategy), there is the need to preserve a certain degree of flexibility to adapt to the seasonality of alternative economic activities. Outright reduction of overcapacity in small-scale fisheries (e.g. through a reduction in the total number of fish nets) may not be particularly relevant and may unnecessarily impact on poor fishers. In contrast, the removal of all subsidies on the acquisition of capital assets would be one way of discouraging the growth of effort.

2.7.7 Biological and environmental constraints[53]

Fish stocks are capable of growth up to a certain limit, which may vary considerably from year to year. The most reliable stock assessments available, by whichever method they might be obtained, should inform

[53] FAO, 1997 (see footnote 36), Sections 1.3.1, 1.3.2 and 1.3.3.

fisheries management decision-making. On average the catch should not exceed the productivity of the resource over time and, to this end, pre-determined limit reference points should be established below which the biomass should not be allowed to fall. The population of a particular fish species may be made up of largely self-sustaining stocks. Each of these should be separately addressed by fisheries management, with the objective of fishing each stock sustainably.

Fisheries management must also be aware of environmental variability and the impact that this may have on the growth of a stock and on its reproductive and mortality rates. This means that the level of fishing effort should be based on the long-term average productivity of the stock and not on periods of high productivity. Care should be taken not to interpret the dispersion or concentration of a stock, which may happen in response to environmental factors, as a change in the stock size, as this could lead to incorrect management decisions.

The long-term productivity of stocks are also related to the carrying capacity of their environment. These may alter as a result of natural variability and of changes induced by human activity, such as coastal habitat degradation, destructive fishing methods and pollution. Similarly, habitat enhancement such as ecologically sound provision of artificial reefs, can positively affect carrying capacity. Inland aquatic environments are particularly influenced by external environmental factors.

Responsible fisheries management should also take account of the impacts fishing may have on the ecosystem such as through food chain effects, physical damage to the environment, and the bycatch of other species.

2.7.8 Monitoring, control and surveillance

Monitoring, control and surveillance[54] (MCS) is an integral part of effective fisheries management. The purpose of MCS is to ensure that fisheries policy and management measures are implemented and that they are, and remain,

[54] Monitoring – the collection, measurement and analysis of data and information on fishing activities; control – specifying the terms and conditions under which resources can be harvested; surveillance – the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities (Cochrane, 2002 (see footnote 37), pp. 176. See also Flewwelling *et al.*, 2002 (footnote 38).

appropriate in the circumstances that pertain at the time. An MCS system is essential for guaranteeing the maintenance of rights as, without the assurance that others will respect them, the rights would cease to exist and there would be a return to open access.

In general fishers will more readily comply with laws and regulations which they consider legitimate. Thus the greater the involvement of fishers and other stakeholders in the process of formulating and implementing rules, the greater the ownership of them is likely to be, leading to more ready compliance.

There is no unique, correct design for MCS systems. Each MCS system needs to be tailored to the specific characteristics of the fishery, including those of the communities involved in the fishery, the gear and methods used and organization of the fishery. These are likely to vary substantially from fishery to fishery.[55]

2.7.9 Institutions

In a broad sense institutions refer to "the humanly devised constraints that structure human interaction".[56] They include formal rules, such as laws and regulations, informal constraints, such as norms of behaviour, social conventions and locally agreed rules, and the enforcement mechanisms relating to them. Institutions are also the organizational support structures that develop and implement the rules.

Fisheries management institutions must deliver the policy through the formulation of legislation, regulations and by ensuring their implementation. Thus the effectiveness of fisheries management institutions is highly dependent on how appropriate they are given the particular circumstances of the fishery.

Decentralized management of fisheries is likely to enhance the possibilities of management being more sensitive to issues of poverty and food security.

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[55] FAO, 1997 (see footnote 36), Sections 2.2.4, 2.3.4 and 2.4.4; Cochrane, 2002 (see footnote 37), Chapter 8.

[56] North, D.C. 1996. Institutions, Organizations and Market Competition. Economic History 9612005, Economics Working Paper Archive at WUSTL. pp. 23. (Available at: http://econwpa.wustl.edu:80/eps/eh/papers/9612/9612005.pdf)

Where local capacities are present (e.g. through existing local professional organizations and committees), there should be devolution of management responsibilities to the local level (principle of subsidiarity). Where supported by appropriate legislation, such arrangements can improve the representativeness and accountability of the management system, thereby enhancing the likelihood of the local fishers seeing their needs and priorities being integrated into the decision-making process. [57]

2.7.10 Data, reference points and performance indicators

The generation, collection and analysis of appropriate data and information is essential for informed decision-making.[58]

Information for decision-making is required with different degrees of detail and analysis for decisions relating to the formulation of policy and management plans, for determining management measures, reference points and performance indicators. The information required needs to be drawn from a range of disciplines.[59]

It should immediately be noted that attaining better knowledge in the fisheries sector has an almost limitless capacity to absorb skilled personnel and finance. Aquatic ecosystems, are dynamic and complicated networks of continually changing and moving natural populations, sometimes spread over very large areas, and often greatly influenced by variable aquatic environments. Human populations, which through fishing activities become functionally part of these aquatic ecosystems, are no less dynamic than are other biological populations. Social changes take place continuously and on different scales, affected by changing economic and political circumstances, and by the supply of and demand for fisheries products.

The data and information sought and generated should be within the realm of what is realistic and attainable. It becomes important to develop the

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[57] A fuller discussion of institutions is found in FAO, 1997, Sections 1.6 and 4.3; also in Cochrane, 2002, Chapter 7).

[58] FAO. 2003. Strategy for Improving Information on Status and Trends of Capture Fisheries. Stratégie visant à améliorer l'information sur la situation et les tendances des pêches de capture. Estrategia para mejorar la información sobre la situación y las tendencias de la pesca de captura. Rome/Roma, FAO. 34 pp.

[59] FAO, 1997 (see footnote 36), Section 2, discusses this in greater detail. Note also Cochrane, 2002 (footnote 37), Chapter 5.

ability to define the dimensions or limits of what data and information is most needed, and to succinctly and cost-effectively produce this knowledge. Decisions should not be put off pending the availability of knowledge that goes well beyond what is feasible for available expertise and finances to produce. The need for fisheries managers to make decisions on the basis of imperfect, though best available knowledge, is closely associated with the application of the precautionary approach.[60]

2.7.11 Dealing with transitions

The transition from open access to effectively managed fisheries can be expected to bring long-term improved benefits for the fisheries and for society as a whole. However, there is a time-lag, usually of some years, between the implementation of management measures and the realization of the stream of benefits resulting from the changes made.

The introduction of an effective management system may involve considerable losses of income for labour and capital, and revenue losses for those whose fishing gear, boats and processing facilities become redundant. For some the losses may be long-term as a result of loosing livelihoods due to no longer being permitted to fish. Both the short-term and longer-term losses need to be explicitly acknowledged and financed. Resistance to the introduction of management measures often arises as a result of well-founded fears of personal loss. With net gains for society as a whole resulting from effective fisheries management, it ought to be possible to find through negotiation equitable ways of distributing the additional benefits so that they produce a net improvement for small-scale fishers. Failure to openly and fairly debate and resolve this question will almost inevitably result in resistance to change, possibly on a scale that prevents the change from taking place.

In some instances resource rent of considerable value is still being generated in the fishery and raising revenue through taxation to finance fisheries management is possible. However, this is unlikely to be the case for fisheries that are seriously depleted and in most urgent need of management. Neither will it be possible to tax fisheries where all potential resource rent is being used to keep large numbers of poor people in the fisheries. Bridging finance from development banks and development finance institutions could form a very effective means of assisting

[60] FAO, 1997 (see footnote 36), Section 1.8.

transitions for many small-scale fisheries, making it possible in some cases to permanently lift small-scale fishers out of poverty and food insecurity.

2.8 Making markets work for the poor

2.8.1 The Code of Conduct

The Code pays considerable attention to post-harvest practices and trade. It has Articles that, if appropriately implemented, would by inference positively benefit small-scale fishers and fishworkers in terms of both poverty alleviation and food security.

> *The harvesting, handling, processing and distribution of fish and fishery products should be carried out in a manner which will maintain the nutritional value, quality and safety of the products, reduce waste and minimize negative impacts on the environment* [Article 6.7].
>
> *International trade in fish and fishery products should be conducted in accordance with the principles, rights and obligations established in the World Trade Organization (WTO) Agreement and other relevant international agreements. States should ensure that their policies, programmes and practices related to trade in fish and fishery products do not result in obstacles to trade, environmental degradation or negative social, including nutritional, impacts* [Article 6.14].
>
> *States should promote the adoption of appropriate technology, taking into account economic conditions, for the best use and care of retained catch* [Article 8.4.4].

All of Article 11 relates to post-harvest practices and trade. There are 12 paragraphs relating to Responsible fish utilization (in Article 11.1), 15 paragraphs relating to Responsible international trade (in Article 11.2), and eight paragraphs relating to Laws and regulations relating to fish trade (in Article 11.3) all of which have implications for small-scale fisheries.

2.8.2 Trends in macro-level market reforms and their impacts

Many developing countries have taken steps to bring about macro-level market reforms in recent decades. While such reforms in some countries have failed drastically, more usually countries with market-friendly policies such as openness to international trade, disciplined monetary and fiscal policy, and well-developed financial markets, enjoy better growth

performance than countries where such policies are absent. However, even when market-friendly reforms have succeeded in delivering growth, the effects on the incomes of poor people have varied. It is imperative, therefore, that States take special care to assess and mitigate potentially negative impacts of such macro-level reforms on the poor at the micro-local level.

The balance of this section focuses more narrowly on trade and post-harvest issues in fisheries, and describes recent trends and some measures that can be taken within the fisheries sector to support the poor. However, it is noted that States must ensure that input markets, and more general market issues as mentioned above, are also made to work for poor small-scale fishers and traders. This can be achieved through some of the means discussed in Section 2.9.3 and 2.9.4 on financial markets by addressing issues of credit, insurance and social security, and in Section 2.4.3.2 on legislation enabling migration to address issues of labour market requirements. Other input market issues need to be carefully monitored to assess their impacts on small-scale fisheries, with logistical, and in some cases legal, interventions ensuring easy and equitable access to the inputs needed. An example includes encouraging competition between companies (that may be supplying small-scale fishers and fish traders) by lightening and simplifying the regulatory burden on businesses.

2.8.3 Trends in fish trade and their impacts on small-scale fisheries

The poor rely heavily on the post-harvest sector, and critically, while the gender balance in the sector is different in different countries and regions, women typically make up the majority of workers, and in many cases may represent more than 90 percent of those involved. The post harvest sector, therefore, provides significant income and employment opportunities for women who may otherwise have limited options available to them, especially in remote rural locations. Given that according to the 1995 Human Development Report 70 percent of the world's poor are women, the post-harvest fisheries sector offers very obvious potential for contributing to poverty alleviation.

Despite this, trade has become a contentious issue in recent years. There is little doubt that both domestic and international trade have generated direct and indirect benefits, and offers potential for small-scale fisheries to

contribute to both poverty alleviation and food security at both the macro and micro-level as discussed in Section 1, and also as highlighted in a recent FAO Expert Consultation on International Fish Trade and Food Security.[61] However, it is increasingly recognized that there are "winners" and "losers" from both domestic and international trade.[62] In part, this is because of certain trends in fish trade that have lately become evident.[63]

Increasing global demand and supply of fish and fish products, has resulted in significant increases in the net receipts of foreign exchange by developing countries (i.e. deducting their imports from the total value of their exports) from US$ 3.7 billion in 1980 to US$17.6 billion in 2002. Increasing global trade has also resulted in higher incomes and more employment opportunities in the fish processing sector. However, there are some caveats to these increases. Some countries are experiencing changing fishing practices, with greater levels of investment and technology in the catching sector resulting in concentration of ownership in fewer hands, and landings in fewer receiving centres. Centralized landings may disadvantage women and the very poor because they are less organized, have less credit and access to infrastructure (such as storage) compared to better-off and better organized export agents, commission agents, traders and merchants. This means that small-scale traders may find it hard to compete for anything but the low value species on offer, with correspondingly low profit margins. Import regulations, like those that require application of specific food safety systems such as the Hazard Analysis and Critical Control Points (HACCP), have effectively decreased the access of small-scale fishers to lucrative export markets, although such systems are beneficial from a food-safety perspective. Increases in inland capture fisheries (almost all small-scale) and aquaculture have also caused locational shifts in post-harvest activities.

At the same time, the global trend in recent years has been towards more fish and fish products being sold in fresh/chilled form, as opposed to salting or drying – traditional forms of preservation in developing countries. This has important implications for the livelihoods of traditional processors and

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[61] FAO. 2003. *Report of the Expert Consultation on International Fish Trade and Food Security. Casablanca, Morocco, 27–30 January.* FAO Fisheries Report. No. 708. Rome, FAO. 213 pp.

[62] FAO. 2003. *The state of food insecurity in the world* (SOFI 2003). Rome, FAO. 36 pp.

[63] Kurien, 2005 (see footnote 23).

those supplying inputs (fuel wood, packaging materials, etc.) to such activities. The greater use of ice coupled with improved transport links has also increased the ability of external buyers to access fresh fish from remote landing centres, increasing competition for traditional traders and processors, who often lose out when external buyers are able to pay more due to higher prices paid by their clients. As traditional traders are often women, existing gender inequities may be increased further.

In developed countries, increasing consumer concern about social, environmental and health issues are being reflected in what is known as Corporate Social Responsibility (CSR), and by the increasing use of certification schemes and codes of practice. Allied to these trends, and associated with quality issues, is an increasing focus by buyers on the traceability of products. While certification initiatives *may* offer the opportunity in some cases of higher prices and access to niche markets, there is concern (but little evidence to date) over the possible negative impacts on developing country producers because of their lesser ability to engage in, and comply with such initiatives.

National, regional and international regulatory frameworks can have a significant impact on how the benefits of international trade in fish and fishery products are distributed. In general, the fewer barriers to trade in place, the more the allocation of benefits is decided by the negotiating and competitive position of the individual economic actors in the value chain. The resulting increase in trade may yield significant gains in economic efficiency and welfare gains to the participating countries.

The most important framework is the regulations and agreements of the World Trade Organization[64] aimed at creating a rules-based system to ensure free and fair trade, and which are binding for its 148 member countries and customs territories. Many regional trade frameworks are also important, with a general trend towards attempts to reduce tariffs and increase trade and economic co-operation between participating countries.

[64] Especially important in this regard are: Tariff schedules; Generalized System of Preference (GSP); The Agreement on Sanitary and Phytosanitary Measures (SPS); The Agreement on Technical Barriers to Trade (TBT); and The Agreement on Anti-Dumping Measures.

2.8.4 What can be done within fisheries?

Ensuring that small-scale fishworkers can adapt so as to (i) minimize any potential negative impacts of global, regional and national trends and (ii) respond to marketing and trade opportunities, necessitates special attention to methods that support small-scale post-harvest activities, especially by women and the poor.

It should also be noted that the poor are often not early adopters of technology due to their marginal circumstances, lack of information, and attitudes toward risk. Thus post-harvest initiatives and market reforms must: (i) specifically assist the poor to ensure that benefits do not accrue just to those that are better off; (ii) assist the poor to adapt so that they are not left behind by the speed of change; and (iii) ensure that fishers and fishworkers participate in decision-making in community development initiatives to manage fishery-related infrastructure.

2.8.4.1 Recognizing the importance of the small-scale post-harvest sector

Recent decades have seen insufficient attention given to the small-scale post-harvest sector in the policies, programmes and research activities of many States, donor agencies and researchers, despite the considerable numbers of people involved, and the resulting benefits in terms of poverty alleviation and food security as described in Section 1. A starting point for making markets work for the poor, therefore, is to recognize and address the small-scale fisheries post-harvest sector and other sectoral policies and programmes, including its important gender component. A wider recognition of the importance of small-scale fisheries would also help to ensure that international trade regulations and agreements are more carefully structured so as to provide benefits to small-scale fisheries rather than resulting in their marginalization.

2.8.4.2 Thinking at different levels and considering trade-offs

When considering the post-harvest sector, it is important for States to think about the different levels and conceptual divisions presented at the beginning of these Guidelines – i.e., on poverty prevention, poverty reduction and food security. Thus, initiatives should be focussed on and tailored to ways of: (i) increasing wealth generation by the poor engaged in the sector (poverty reduction); (ii) ensuring the poor can engage in fish trading and processing as a “safety-net” activity in times of crisis (poverty prevention); (iii) ensuring that the sector maximizes the availability and

affordability of fish to the food insecure; and (iv) maximizing the re-distributive potential of wealth generation from exports. Making markets work for the poor will not only benefit those involved in the post-harvest sector; it will benefit those in the harvest sector as well, by providing an outlet for catches and potentially by improving prices. Section 2.3.5 highlighted certain policy trade-offs that might need to be made; the need to make trade-offs applies as much to the post-harvest sector as to the harvest sector.

2.8.4.3 Improved information and advice

The need for, and benefits of, better market information and advice, applies to both domestic and international markets. For the very poor, special assistance may be needed to improve domestic marketing as traders and processors involved with incidental amounts of product are always going to face certain impediments to engaging in international trade. Better information can play an especially important role in empowering small-scale producers, traders and processors within domestic marketing chains. Both ad hoc initiatives and regular market monitoring systems can be used to provide improved marketing information and advice to small-scale fishers and fish traders covering such areas as:

- market segmentation, buyer requirements, and other characteristics of potential markets so as to enhance market penetration;
- prices, or changes in demand to increase the bargaining power of poor small-scale traders;
- changes to regulatory mechanisms governing fish trade to ensure that poor small-scale traders can prepare for and adapt to such changes, rather than being marginalized by them;
- general background on the evolving nature of fish trade in order leads to reduce market imperfections (for example, if price fixing, monopolies or oligopolies are identified and publicized).[65]

[65] But it should be noted that such imperfections may also need to be legislated against, with appropriate mechanisms put in place to investigate and act on claims of price collusion.

Improved information to consumers on the health benefits of fish consumption through generic advertising can also benefit both consumers (through resulting health benefits), and small-scale producers and traders (by increasing demand and prices for products).

2.8.4.4 Technological improvements

Support should be provided for initiatives aimed at developing, diversifying and transferring appropriate harvesting technologies and for initiatives aimed at developing appropriate technologies in processing, preservation, transport, and storage. These can increase value-added, improve quality, and reduce fish spoilage and wastage. Despite much work over the years, the issue of post-harvest losses in particular remains a critical one in terms of its impact on reducing incomes for fishers (from poor handling and preservation of catch onboard), traders and processors. It is also important in terms of its impact on food security with post-harvest losses reducing the availability of fish for human consumption.

Small-scale fishers and fishworkers should also be assisted by extending access to suitable communications technology. Technology (e.g. in the form of radio, television, cellular phones, and computers) can all play an important part in ensuring better market information (see Section 2.8.4.3), and in general efforts at education, reducing marginalization and increasing empowerment, by providing a voice for poor fishers and fishworkers and the opportunity to increase linkages and networks outside of their own localities.

2.8.4.5 Organizational improvements and workers welfare

Significant benefits for poor producers and traders can be realized through organizational efforts to jointly harvest, market and price product. Greater volumes of product for sale increases bargaining power, and also helps to ensure reliability of supply, which can be an important determinant of price. There is a need therefore to establish and foster marketing organizations through increased human capacity (see Section 2.5). While historically assistance to such organizations has focused on input delivery systems (supplies of credit, boats, etc.) it may also be necessary through legal measures to strengthen control over the first sale transaction, for example through “a right of first sale” legislation as part of overall domestic market regulation.

But organizational efforts should also focus on issues outside of those designed to increase prices, by providing wider services to women workers. Examples include issues relating to credit, savings, pensions and social security as discussed in Section 2.9, providing education and skills development, and helping migrant workers to keep contact with their families.

2.8.4.6 Responding to trends in CSR, certification and traceability

In dealing with trends in corporate social responsibility (CSR), certification and traceability, a number of concrete steps can be taken to ensure that poor small-scale producers can benefit from, rather than be disadvantaged by, ongoing developments. These include:

- drawing lessons from existing non-fisheries initiatives on ways to ensure that small-scale producers are not disadvantaged;

- investigating ways of bringing down the costs of certification and compliance with different initiatives, and providing support to cover certification and compliance costs; and

- engaging in regional cooperation to work on harmonization of initiatives; and advocacy to increase the relevance of existing initiatives to developing country producers.

2.8.4.7 Access to fish

Access to fish by poor small-scale traders and processors can be enhanced through support for sustainable resource exploitation which is a *sine qua non* of ensuring access to fish. However, sustainable exploitation must be coupled with support for distributional issues of access to catches by small-scale fishers, and to fish purchases by small-scale traders and processors.

Access to fish can also be enhanced through greater levels of bycatch utilization through mechanisms including legislation to ensure landings of bycatch from industrial fisheries, product development, and the collection of bycatch at sea by small-scale fishers.

Another very concrete step to increase access to fish by traders and processors is to understand and then address the constraints faced by small-scale traders and processors, particularly women, at harbours and other landing centres. Provision of appropriate facilities at harbours and landing

centres where fish can be purchased is known to be important in increasing access to fish by small-scale traders and processors, particularly women. Such facilities include running water, storage facilities, toilets, and night shelters. It is important to ensure fishworkers participate in the management of this infrastructure or "physical capital".

2.8.4.8 Access to markets

Transport infrastructure and services are clearly of vital importance for traders in getting to markets. Transport constraints facing small-scale traders should be assessed, and solutions may include, for example, the provision of mini-buses at nominal rates to transport traders and their products to market, if they are denied access on public transport due to the "smelly" nature of the produce they carry. Equally, improvements to roads in remote rural areas may facilitate the movement of fish to markets (by reducing costs, the time required, or by encouraging additional private sector transport operations), and may also increase access to business inputs required by traders.

The free movement of fish without harassment at checkpoints and borders is also a key issue for many small-scale traders, and it is known that corruption disproportionately affects the poor. Such problems should be highlighted and publicized, and subsequently dealt with by local and national authorities.

Provision of appropriate facilities at market sites (as opposed to landing sites) for traders to help ensure access to markets should also be supported. Examples include facilities such as toilets, running water, childcare facilities, and market stalls at affordable rentals.

2.9 Financing poverty alleviation[66]

2.9.1 The Code of Conduct

Financial issues are mentioned in Article 5.2 of the Code on the special requirements of developing countries as follows.

[66] Issues of ensuring appropriate levels of funding for small-scale fisheries have already been discussed in Section 2.5.3 on implementation issues.

States, relevant intergovernmental and non-governmental organizations and financial institutions should work for the adoption of measures to address the needs of developing countries, especially in the areas of financial and technical assistance, ….

2.9.2 Financing transition to responsible fisheries[67]

Financial aspects of fisheries are gaining increasing recognition, and there are moves towards greater "market discipline" in the sector as a way of contributing towards a transition to responsible fisheries, as evidenced by the recent focus on issues such as the withdrawal of subsidies, the strengthening of use rights, the substitution of grants with loans, cost-recovery programmes, and the greater emphasis on the capture of resource rents. The move to responsible fishing will in many cases have significant impacts on many poor small-scale fishers and fishworkers.

Careful assessment should be made as to whether targeted assistance for the poor is necessary to ease the impacts of the transition towards responsible fishing, and what the impacts of programmes aimed at responsible fishing might be.

2.9.3 Credit and savings

The lack of access to affordable credit and the inability to generate savings, are major constraints for many poor small fishers and fishworkers. Making financial institutions work for the poor at the micro-level, is an important precursor to ensuring that more general market reforms (see Section 2.8.2) do not disadvantage the poor.

In rural areas in developing countries, where the largest number of small-scale fishers and fishworkers operate, informal savings schemes and credit markets are widely developed and may have positive attributes in terms of providing access to capital or assets because they are "closer" to the users, more flexible, and more adapted to their needs. There is a need, therefore, to build on the strengths of existing informal mechanisms through support for traditional or informal savings and credit schemes, and for the establishment of appropriate new informal organizational saving mechanisms.

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[67] See Section 2.7.11.

However, in the absence of schemes run on a collective basis, informal credit mechanisms tend to lack transparency and accountability, and money-lenders typically charge high interest rates and often enter into exploitive relationships, inhibiting the rural poor from investing in production and income-generating activities. Such relationships may include credit with catch-sale bondage, credit on high interest, or renting a fishing boat from a non-operating owner in return for a (large) share of the catch. De-linking credit from the marketing of catch, therefore, may be an especially effective way to generate savings and enable the poor to accumulate wealth from their investments. Other solutions involve support for rural credit and savings institutions in the form of cooperatives, or government encouragement to commercial banks to provide cheap/subsidized credit. As with informal savings and credit mechanisms, such initiatives have their benefits, and there is certainly a need to increase access to general credit and savings institutions, as well as to fisheries-specific institutions. However, evidence from evaluations suggests that such formal credit programmes are often not successful, both in terms of the viability of lending institutions, and the ability of intended beneficiaries to access credit.[68]

As a result of these problems, there is now a growing recognition of the importance of microfinance as a crucial development tool for poverty alleviation. Microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers and insurance, and is characterized most commonly by small loans. Microfinance providers may be formal financial institutions (e.g. public and private development banks and commercial banks), semiformal institutions (NGOs, credit unions and cooperatives) or informal providers (i.e. those entities that operate outside the structure of government regulation and supervision). Importantly, microfinance provides financial service products that can be more easily accessed by women in comparison to other forms of savings and credit mechanisms. Credit provided to finance micro-enterprises is thus a critical input in increasing incomes, especially for women, and independent earnings contribute to increased self-confidence,

[68] Shreekantha, S. 2003. Concepts and approaches of microfinance programmes and their application in fisheries development. In: Tietze, U.; Villareal, L. *Microfinance in fisheries and aquaculture: guidelines and case studies.* FAO Fisheries Technical Paper. No. 440. Rome, FAO. pp. 47-56.

mobility, a higher status in the family and improved decision-making, all of which reinforce each other to improve women's status generally.

Because of the diversity of the demand for, and suppliers of, microfinance services, it is not possible to prescribe or subscribe to a particular methodology or an institutional mechanism. Lending methodologies and procedures must be carefully tailored so that they appropriately serve the financial needs of the fishing, trading and fish farming communities concerned. However, for micro-finance schemes to be successful, there is a need to ensure that.[69]

- providers can offer both both social and financial services, as they are mutually supporting;
- training is made available to individuals and groups in financial aspects of micro-enterprise development, preparation of project proposals, team building, organizational skills, and other aspects of micro-enterprise development;
- apart from market and technical factors, time constraints are taken into account, especially in relation to women, as in many cases they prevent expansion of small business activities;
- banks working through self-help groups are fully committed to the microfinance activities concerned, since credit performance is greatly affected by the nature (and therefore the mandate) of the banks involved, and the attitude and performance of individual bank staff can be crucial;
- services are carefully tailored to meet the preferences of poor entrepreneurs;
- operations are streamlined wherever possible to reduce unit costs; and
- special attention is paid to ways clients can be motivated to repay loans.

[69] Tietze, U.; Villareal, L. *Microfinance in fisheries and aquaculture: guidelines and case studies.* FAO Fisheries Technical Paper. No. 440. Rome, FAO. 144 pp.

2.9.4 Insurance and social security funds

Access to insurance and social security schemes and the ability to save for them warrant special mention because they are of vital importance in minimizing the vulnerability of the poor to sudden changes in income.

At the macro-level it may be necessary to make changes to the way that pensions and social security are funded, and to conditions of eligibility. But microfinance can also include issues of insurance and social safety nets. For poor small-scale fishers and traders operating in remote rural areas, local-level initiatives may be at least as important as macro-level ones. Social security functions can be provided effectively through formal micro-level activities as well as through informal group support and savings mechanisms. Assistance should be provided in establishing sustainable mechanisms through both modalities and in increasing education about their importance.

2.10 Appropriate information, research and communication

The purpose of this final section is to examine the information, research and communication systems needed in small-scale fisheries in relation to poverty alleviation and food security. A fundamental point to bear in mind is that the exact contribution of small-scale fisheries to poverty alleviation and food security, and more broadly to rural development and national economic growth, will not be appropriately recognized by decision-makers and planners unless better information is generated about the various dimensions of these contributions. Of particular importance is the recognition that currently available data on employment, income and value of fish production are grossly inadequate as indicators of the real numbers of people whose livelihood depends on fish, or the real contribution of fisheries to the local and national economies.

2.10.1 The Code of Conduct

The General Principles of the Code call on States to facilitate consultation and the effective participation of industry, fishworkers, and environmental and other interested organizations in decision-making (Art 6.13), and to ensure that “fishers and fish-farmers are involved in the policy formulation and implementation process” (Art. 6.16). “Effective participation” *inter alia* implies the collection of sufficient and appropriate data and other knowledge adequately to inform decisions; otherwise, the participation is unlikely to be effective.

Article 12 of the Code specifically addresses Fisheries Research, and urges States to:

> … *ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, social science, aquaculture and nutritional science*…[and to] *ensure the availability of research facilities and provide appropriate training, staffing and institution building to conduct the research, taking into account the special needs of developing countries* [Article 12.1].

Thus Article 12 establishes that responsible fisheries requires the availability of a sound scientific basis to assist fisheries managers and other interested parties in making decisions. An interdisciplinary interpretation of "science" that includes the social sciences is incorporated. The Code emphasizes State responsibilities for the funding, implementation and dissemination of appropriate research, often with specific reference to developing-country needs. Article 12.12 provides the most specific reference to the small-scale sector:

> *States should investigate and document traditional fisheries knowledge and technologies, in particular those applied to small-scale fisheries, in order to assess their application to sustainable fisheries conservation, management and development*.

Often traditional or indigenous knowledge of fisheries resources has developed as a result of the astute observations of fishers over decades and passed down from generation to generation, with the inquisitive testing, verifying or amending it. This knowledge, as with any arising from standard modern scientific methods, should be open to further investigation and verification. At times, the "best scientific evidence" available to fisheries managers might arise from indigenous knowledge.

Research priorities identified in the Code (Articles 12.4, 12.5, 12.8, 12.10, 12.11, and 12.12) are a mix of operational and strategic areas. Economic, social, marketing and institutional issues in fisheries tend to be less well specified as research topics (see Article 12.9) and organizational and institutional issues, in particular, are treated as research process issues, rather than a subject for research *per se*. The remainder of this section builds on the Code's existing provision for information issues and research recommendations, but also identifies areas that have emerged as information needs and research priorities since the Code was drafted.

2.10.2 Information and communication issues

By their nature and main characteristics (multiple landing sites, remote locations, partially subsistence-based activity, etc.) small-scale fisheries raise a certain number of challenges in terms of information collection and use.[70]

The current policy shift towards decentralization of management responsibilities and the importance of small-scale fisheries in poverty alleviation and food security requires a reconsideration of the type of data and information necessary, and the way data are collected, used and disseminated. In addition to more appropriate (pro-poor oriented) information and research, there is also a need to develop better communication strategies to improve the flow and dissemination of information related to small-scale fisheries and their contribution to poverty alleviation, rural development and food security. Generating appropriate information is not sufficient. More attention must be devoted to identifying the target audiences and tailoring messages to reach those audiences. Measures to consider are interrelated and overlapping, and include, for example:

- Increasing the awareness by poor small-scale fishers and fishworkers of their rights so they can advocate for them through such means as:
    - better access to and involvement with poor small-scale fishers and fishworkers in communication and information strategies through appropriate region-specific methods such as use of internet, radio, field schools, etc.;
    - more active extension work on social issues;
    - organization and coordination of "fisheries fora" at different levels (local, district, national and international) to foster stakeholders' participation in the decision-making process,

[70] Mahon, R. 1997. Does fisheries science serve the needs of managers of small stocks in developing countries. Canadian Journal of Fisheries and Aquatic Sciences 54: 2207-2213.
Berkes, F.; Mahon, R.; McConney, P.; Pollnac, R.; Pomeroy, R. 2001. *Managing small-scale fisheries, alternative directions and methods.* Ottawa: International Development Research Center.

institutional development of the subsector and better awareness of the importance of small-scale fisheries;

- integration of indigenous knowledge and participatory research in the co-management of small-scale fisheries, which could be facilitated by better exchange of information between planners and fisheries stakeholders (for example, through the use of consultation workshops);
- development of information systems that are low on data requirements (for example, data recording systems based on the collection of only a few indicators can provide essential information for the understanding of the fisheries);
- Adoption of information systems that allow evaluation and monitoring of poverty and vulnerability in fishing communities (e.g., poverty profiling), and the pro-poor impact of decentralization reforms;
- elaboration of assessment methodologies that allow a better understanding and documentation of the actual and potential contribution of small-scale fisheries to poverty alleviation and food security; and
- better methods of conveying an appreciation of these contributions at a high political level, which requires:
    - fisheries departments to be key-message carriers through to Ministers, particularly with regard to the current lack of representation of small-scale fisheries in poverty reduction strategies;
    - efforts to influence major donor and financing agencies to ensure that small-scale fisheries are part of their agenda; and
    - assessment of the potential role of “lobby groups”, i.e. international NGOs, civil society organizations, world fora, etc., in influencing agenda-setting and the policy processes of national governments.

2.10.3 Research requirements

The changing development priorities towards poverty alleviation and food security issues, as well as developments in governance arrangements in fisheries, imply far-reaching changes in both the subject-orientation and the

process of research. In terms of process, it requires research to be more participatory both in setting research agendas, and in the way research is conducted. This is especially important given the great diversity of small-scale fisheries and their context-specific nature, which means that information and research requirements at the operational level are similarly diverse and thus not amenable to prescription. Bearing this caveat in mind, the following paragraphs emphasize general strategic research issues, based on identified gaps in knowledge and understanding of the dynamics of the small-scale fisheries sector and its interaction with the wider socio-economy.

Research Area 1: Poverty and vulnerability in small-scale fisheries. Although considerable recent research effort has focused on understanding the poverty status of fisherfolk and the underlying reasons for it, more work on poverty and vulnerability is required to provide policy makers with information required to support pro-poor fisheries development and management. There can be no standard "recipe-style" methodology for poverty and vulnerability assessment in small-scale fisheries, as the methodology must be adapted to fit the research questions being asked and the available research capacity. Nevertheless, it is suggested that any analysis of poverty should consider the following components: income, expenditure and asset values; access to assets, property rights, power relations; vulnerability; and psycho-social impacts of poverty and marginalization. Understanding vulnerability of fishing communities to HIV/AIDS and designing appropriate response strategies is a particular priority in many countries.

Research Area 2: Demographic, economic, social and cultural issues among fisherfolk. Although there have been a number of studies on fisherfolks' livelihoods, culture and society, many of these have been more in the nature of "snapshots". There are few longitudinal studies such as those for small-scale farming communities that use "panel data" – repeat visits over a period of years to record demographic, economic, social and cultural change. It would be useful to follow up some of the recent livelihoods studies with repeat exercises designed to assess the key changes in small-scale fisheries in more detail than is possible from recall surveys on perceived change. Studies of change and its implication for fisheries management and development might include the following topics: basic demographic research; gender issues; community-level analysis; traditional or indigenous knowledge; and migration and livelihood diversification.

Research Area 3: The role and contribution of small-scale fisheries in rural and peri-urban economies in developing countries. There is little knowledge or consensus on what role small-scale fisheries play in the economy. The conventional wisdom that fisherfolk are the "poorest of the poor" and that small-scale fisheries are the "occupation of last resort" is gradually being replaced by the recognition that there is a more complex and context-specific picture. Policy and management that does not depend on assumptions about the social and economic role of fisheries is required, and research approaches to understanding the actual role of fisheries in the wider socio-economy and how this is influenced by policy change, both inside and outside the fisheries sector, include: value chain analysis; environmental valuation; and fisheries policy analysis.

Research Area 4: Effectiveness of the changing fisheries governance regime. Although fisheries governance systems have changed appreciably in the last 20 years, it is proving difficult to evaluate the effectiveness of many of these changes, partly because they are relatively recent compared to the length of data series required to demonstrate success, and because they take place simultaneously with wider social, economic and policy changes in an "uncontrolled experiment". Several features of the evolving fisheries governance regime can be identified as key areas for increasing our knowledge of their consequences. These are: factors associated with successful co-management; the role of local and central government; the impact of regional and international agreements on poverty in small-scale fisheries; and methods to enhance compliance with regulations, resolve conflicts, and monitor outcomes of development and management initiatives in the small-scale sector.

Research Area 5: Small-scale fisheries, resource and environmental conservation. Concern over the state of the aquatic environment increasingly drives the agenda in fisheries governance. The crisis narrative prevalent in recent years first identified fisherfolk as among those culpable for resource degradation, but increasingly views small-scale fishers as those most disadvantaged by and least able to prevent overfishing and habitat degradation. Environmental NGOs have formed alliances with small-scale fisherfolk to protect marine resources and livelihoods. An evaluation of the successes or failures of these alliances and the lessons that can be learnt from them is overdue. This research can be informed by wider critical analysis on the successes and failures of integrated conservation and development programmes. Critical areas for research include: small-scale fisherfolk, poverty and the management of marine protected areas; and small-scale fisherfolk as conservationists. Understanding the conditions

under which fisherfolk create institutions for conservation, and those under which such institutions break down, is important if small-scale fisherfolk are to be involved as partners in integrated conservation and development programmes that seek to trade-off local economic gains with global environmental ones.

Research Area 6: The use of integrated assessment in fisheries. Fisheries management decisions have a multiplicity of impacts which include socio-economic impacts on fishing communities, environmental and biological impacts on the resource base, and possible impacts on other sectors. Assessment of a fishery needs to take account of a multi-disciplinary range of parameters. The concept of the integrated assessment of the performance of small-scale fisheries and the development of methodologies that take account of this multiplicity of impacts needs to be further developed.

2.10.4 Recommendations on bridging the gap between research, policy and action.

As well as the shift in emphasis to include some of the research problems and needs outlined above, there is a requirement for improved links between research and policy. Some of the recommendations for improving these links, derived from a recent ACFR meeting on small-scale fisheries[71] can be summarized as:

- research plays an important role, not just to inform policy, but in empowerment, advocacy and mobilization of resources;
- research delivery time-scales need to be relevant to policy needs, with a balance between operational, strategic and more "fundamental" research needing careful consideration;
- research findings and policy implications need to be clearly communicated to their target audiences;
- including more stakeholders in research, especially end-users in the form of fishers and fishworkers, would make research more demand-led and increase ownership, thereby ensuring results are more likely to feed back into action;

[71] FAO, 2004 (see footnote 7).

- in targeting research to policy makers, it should be remembered that policy makers are not just those in government, but also those making “informal” policy in the private sector;
- research will be most effective if it is embedded in a review and planning process that ensures it is more action-orientated; and
- research capacity building is often required in developing countries, but is only sustainable if incentives for retention of that capacity can be addressed.

These are the challenges that fishery sector stakeholders must consider in aiming to increase the contribution of small-scale fisheries to poverty alleviation and food security.

3 CONCLUSION

These Technical Guidelines deal with the complex and substantial challenge of enhancing the contribution that small-scale fisheries could make to alleviating poverty and improving food security. Drawing upon the Code of Conduct for Responsible Fisheries, they provide guidance on policies and measures which, if widely implemented, could be expected to result in many millions of fishers, fishworkers and their communities being able to improve their standard of living, escape from poverty and lead more secure and fulfilled lives. In addition, many other poor people in rural areas would indirectly benefit from the wealth created and food produced by small-scale fisheries. To achieve this, it is imperative that fisheries and other natural resources are not squandered, and that the benefits that flow from their use are equitably distributed. The biggest single contribution to achieving this goal probably lies in the empowerment of small-scale fishers and fishworkers within a context of transparent and open engagement through legally enforceable rights to aquatic resources, and with improved access to capital, markets and know-how.

APPENDIX: Tables

Table 1. The different dimensions of poverty alleviation in relation to small-scale fisheries, including the specific issue of vulnerability

	Poverty alleviation				Fishery as a source of vulnerability
	Poverty reduction: Fishery contributes to lift people out of poverty		*Poverty and vulnerability prevention:* Fishery contributes to maintain a minimum standard of living		
Level	**Contribution**	**Mechanisms**	**Contribution**	**Mechanisms**	**Causes**
Individual/ Intra-household	Livelihood support to other household members, particularly dependents	Fishing income spent on children's' education, and building other household assets (e.g. farm inputs, investment in small enterprises for other household members to run)	Household subsistence	Fishing income contributes to household budget – expenditure on food, clothing and healthcare	Strongly gendered roles and frequent absence of (migrant) male fishers may limit intra-household income distribution Absence from home and fishing lifestyle may increase vulnerability of partners to HIV infection

	Poverty alleviation				Fishery as a source of vulnerability
	Poverty reduction: **Fishery contributes to lift people out of poverty**		***Poverty and vulnerability prevention:*** **Fishery contributes to maintain a minimum standard of living**		
Level	**Contribution**	**Mechanisms**	**Contribution**	**Mechanisms**	**Causes**
Household level/ sector	Generation of wealth	Effective capture of fishery rent (capital accumulation) High level of commercialization Access to effective market mechanisms Fish as cash crop for investment and diversification	Safety-net function (transient poverty) Activity of last resort for the poorest (chronic poverty)	Reduce vulnerability and mitigates poverty effects Food security through direct contribution (subsistence) but also fish as immediate cash-crop for safety-net	High occupational risk Risks of losing physical assets
Local level	Engine for rural development	Increased demand for goods and services Rise in wages and employment opportunities (income and employment multipliers)	Social-redistributive system (welfare)	Alternative sources of income, food and/or employment.	Unpredictability of the natural resource availability Natural disaster risk Conflicts

	Poverty alleviation				Fishery as a source of vulnerability
	Poverty reduction: **Fishery contributes to lift people out of poverty**		***Poverty and vulnerability prevention:*** **Fishery contributes to maintain a minimum standard of living**		
Level	**Contribution**	**Mechanisms**	**Contribution**	**Mechanisms**	**Causes**
National level	Economic growth	Trickle up to government through taxes and foreign exchange earnings (regional or international trade)	Re-distributive	Government expenditure from fisheries-related tax and foreign exchange earnings on poverty alleviation measures	High susceptibility to macro-economic fluctuations

Table 2: Dimension of food (in)security

Food security	**Contribution to food security**	
Level	**Direct contribution**	**Indirect contribution**
Individual/ household level (micro)	Through subsistence. Assume the ability of the household to utilize the commodity through adequate non-food input, i.e. clean water, sanitation and health care	Through self-employment or wage
Domestic level (meso, macro)	Direct contribution to national food security through effective commercialization or redistribution of national surplus	Indirect contribution to national food security through foreign exchange earnings (food import)
Global (World)	Limited nature of capture fisheries. Highlights the role that aquaculture and improved fisheries management and utilization will have to play in the future to ensure world fish food security	
Food insecurity	**Temporal dimension**	
Level	Transitory insecurity	Chronic insecurity
Individual/household level (micro)	Temporary break-down in the household's income (e.g. loss of employment, illness)	Insufficient assets (e.g. education, labour, access to credit), lack of access to market opportunities
Domestic level (meso, macro)	Temporary crisis (e.g. food price fluctuations); local or national crop failure, natural disaster, armed temporary or long term conflicts	Structural meso or macro-economic failures (e.g. markets or balance of payment), inappropriate policies, armed conflict

Table 3: Policy objectives

Key policy objectives	Policy "sub-objectives"	Main emphasis on poverty reduction (PR), poverty prevention (PP) and/or food security (FS)
1. Environmental/ sustainability objectives	• Rational exploitation of resources • Provision/restriction of access rights • Appropriate/good data collection • Management of ecosystems • Compliance with international conventions • Effective MCS	Indirect emphasis/impact on PR and FS (and on PP to a lesser extent) through maintenance of resources for long-term exploitation
2. Economic objectives	• Increasing value-added • Promoting export earnings • Improved marketing arrangements • Technological provision and modernization of fishing methods (maximizing sectoral efficiency) • Adequate access to capital • Maximizing resource rent being collected by government • Economic diversification • Increasing incomes for rural fishing populations • Exploitation of under-utilized resources • Minimizing cost of management	• PR • PR • PR, FS • PR • PR, PP • PP • PR, PP (through national redistribution) • PP, PR • PR • PR, PP
3. Social objectives	• Maximizing employment • Ensuring food security • Participation in the fishery by local people	• PP • FS • PP, FS

Key policy objectives	Policy "sub-objectives"	Main emphasis on poverty reduction (PR), poverty prevention (PP) and/or food security (FS)
	• Support for fishing organizations	• PP, PR
	• Capacity development and education	• PP, PR
4. Equity objectives	• Provision of access in certain areas or at certain times for certain groups (e.g. small-scale fishers, locals vs. foreigners)	• PP, FS
	• Assessment and consideration of customary rights	• PP, FS
	• Utilization/landing of bycatch	• PR, PP, FS
	• Issues relating to gender	• PP, PR

Table 4: Coping mechanisms used in fishing-related communities/households to deal with vulnerability

Type of coping mechanism	Within the fisheries sector	Outside of the fisheries sector
Ex-ante risk management	• storage of fish • diversification of fisheries assets • early warning systems and advice on how to prepare vessels and gear for minimum losses, e.g. for hurricanes • development of patron-client relationships to minimize transaction costs in the absence of insurance • credit and improved market information	• investment in livestock • storage of non-fish food items • additional cultivation • use of different cropping patterns • diversification of assets • remittances by family members working away from the household • expenditure of surpluses on assets that appear to be non-productive, e.g. housing, education, health as such assets may be beneficial from a preventative point of view in reducing vulnerability
Ex-post coping mechanism	• debt/credit/loans • expansion of fishing effort in terms of hours and/or areas fished • mortgaging and selling of fisheries related assets	• debt/credit/loans • additional cultivation • employment off-water • exploiting other common property resources, e.g. wild foods • mortgaging and selling of non-fisheries assets
	• illegal fishing activity and non-compliance with gear, area and effort regulations • migration and resettlement to other fishing areas • reduced consumption of fish	• migration and resettlement to non-fishing areas • reduced consumption of non-fish items • deferring medical treatment • mutual support through community and kinship ties • participation of other household members in the labour force

Type of coping mechanism	Within the fisheries sector	Outside of the fisheries sector
	• sale of products into different markets[72] • participation of other household members (typically women and children) in the labour force	• extended family support

[72] Analysis of the marketing chain in the United Republic of Tanzania showed that traders overcome seasonal oversupply in the rainy season by sale to markets for poultry feed, and export to Congo (Gibbon, P. 1997. Of saviours and punks: the political economy of the Nile perch marketing chain in Tanzania. Centre for Development Research Copenhagen Working Paper 97(3)).

These guidelines focus on small-scale fisheries and their current and potential role in contributing to poverty alleviation and food security. They are complementary to existing Technical Guidelines for Responsible Fisheries. Most small-scale fishers are in developing countries and many live in poor and food insecure communities. The guidelines explore ways through which the contribution of small-scale fisheries to poverty alleviation and food security could be enhanced. A vision for the future of small-scale fisheries is presented as a goal towards which the subsector should develop. Ensuring greater participation by small-scale fishers and their communities in the formulation of policies, the development of related legislation and regulations, and in management decision-making and implementation processes, is vital to the realization of this vision. The central role of effective fisheries management, the importance of considering cross-sectoral uses of fisheries and related resources, the special role of women in fish marketing, processing and value addition, the significant scope for trade, the critical role that adequate financing can have in enabling transitions for effective fisheries management and the role of knowledge in making informed decisions are all discussed in these guidelines.

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