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THE PROCESS OF DEVELOPING A MANAGEMENT SYSTEM FOR SUBSISTENCE FISHERIES IN SOUTH AFRICA: RECOGNIZING AND FORMALIZING A MARGINALIZED FISHING SECTOR IN SOUTH AFRICA

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Subsistence fishers were first recognized as a formal fishing sector in South Africa when new fishing legislation, aimed at redressing past inequalities, was enacted in 1998. Little information was available about these fishers, their activities, and the resources upon which they rely. Recognizing the imperative to gain an understanding of the fishers and to consult broadly, the national agency responsible for the management of marine living resources, Marine and Coastal Management (MCM) of the Department of Environmental Affairs and Tourism, appointed a Subsistence Fisheries Task Group (SFTG) in December 1998 to provide advice on the implementation of appropriate management systems for subsistence fisheries. This paper describes the process followed to formulate recommendations that were presented by the SFTG to MCM in February 2000. The activities of the SFTG fell into two categories: research aimed at identifying subsistence fishers and gaining an understanding of their activities and socio-economic profiles; and consultation aimed at ensuring that the needs and aspirations of fishers and the experience of local managers were incorporated. Research included both field-based studies and synthesis of information about comparative fisheries elsewhere. Consultation took the form of local interviews and focus-group discussions, meetings with fishers and a national workshop. A pivotal activity was the development of a clear definition and qualifying criteria for subsistence fishers. A significant outcome was the identification of a separate small-scale commercial sector, previously erroneously lumped with subsistence fishers. Needs of fishers and problems identified during the process provided the basis for recommendations in the following areas: definitions, assessment and categorization of resources, management systems, communication mechanisms, application and allocation procedures, capacity building, compliance, research and monitoring, and funding and staff required for the management of this new sector. An evaluation is made of the opportunities presented by the SFTG process, constraints experienced and lessons learnt, giving important insights that are applicable to other similar processes, yet seldom documented in formal literature.

Key words: management of fisheries, subsistence fisheries

Living resources provide diverse opportunities to coastal human settlements. Large-scale commercial fishing underpins the economy of many coastal areas and maritime countries. Recreational use, or "fishing for sport", although more diffuse than commercial operations, can account for a large portion of the total harvest and can contribute significantly to economic activity through associated industries and by stimulating tourism. In many parts of the world, formal systems of management have been established for most commercial and recreational fisheries (albeit not always successfully). Developed countries typically have policies and legislation formalizing principles such as equitable access and sustainable use, associated regulations (including permits, effort-limitation, quotas), and implementation systems (allocation procedures, compliance programmes, etc.) controlled by dedicated management agencies. Much research and monitoring

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has been conducted and a vast literature exists on the management of commercial and recreational fisheries (e.g. Hilborn and Walters 1992, Pauly 1995, Roberts 1997). Fisheries science is a vibrant and well-subscribed scientific discipline, and it is increasingly expanding to embrace economic and social aspects (e.g. Clark 1990, Charles 1994).

Despite the obvious economic benefits of commercial fishing and the opportunities that exist in servicing the recreational sector, indigenous and poor people living in coastal communities in certain parts of the world appear disconnected from these activities. Instead they depend on the non-commercial utilization of natural resources to meet basic needs for livelihood. Use of natural marine resources primarily for food is most common in underdeveloped countries but also often occurs alongside commercial and recreational fisheries in developed areas. It usually involves the underprivileged components of the community, has a historical or cultural aspect, is common in rural communities and involves localized inshore harvesting activities. This use covers a spectrum of activities and is inconsistently and variously defined in the literature as subsistence, artisanal, small-scale or informal fishing (Hauck 2000, Branch *et al.* 2002a). Despite their prevalence, these activities are generally poorly understood, there is little formal literature about them, and management systems are weakly developed (Fall 1990). Satia (1993) notes that such fisheries are typically ignored because they do not realize overt national economic benefits. For the communities engaged in fishing for basic livelihoods this form of natural resource use can, however, be vital for survival and has been coined a "hidden economy" (Berkes 1990). Unfortunately, the needs of informal fishers have often not been considered during coastal development planning and allocation of resources, and this has in part resulted in over-harvesting, uncontrolled illicit fishing practices, conflict between formal and informal fishing sectors and marginalization of local fishing communities (Berkes *et al.* 2001).

The situation in South Africa is no exception and in many ways illustrates the problems described above. There are, however, also some unique circumstances in South Africa that are founded in political history. First, the racially based "homeland system" enforced in South Africa during the "apartheid" period (pre-1994) entrenched the phenomenon of impoverished rural communities, and perpetuated their reliance on natural resources. Second, the access and labour policies then in existence in South Africa resulted in grossly unequal utilization of, and benefits from, natural resources. This is not to say that subsistence fishers did not exist in South Africa. In fact, there is a rich literature documenting their long history of utilization of inshore resources (e.g. Siegfried *et al.* 1985, Hockey *et al.* 1988, Kyle *et al.* 1997a, b, Tomalin and Kyle 1998) and the ecological implications thereof (e.g. Branch and Moreno 1994, Lasiak and Field 1995), and this has provided a key contribution to the international debate on community regulation and harvesting impacts on rocky shores (Castilla 1999). Most of these subsistence activities continued despite restrictions that deemed them illegal. This resulted in a large "informal sector" of poachers, and in conflicts with other sectors and with authorities. Towards the end of the apartheid era these fishers could potentially have gained legal access to resources by participating in recreational or commercial licensing systems. In effect, however, access to traditionally utilized resources was denied, because the harvesting methods used and quantities required by subsistence fishers did not conform to conditions for recreational permits, and subsistence fishers could simply not afford license fees. It is therefore not surprising that dependence on subsistence or informal use in South Africa either overlaps with previously demarcated "homeland areas", or is an illegal activity of the poorer previously disadvantaged sector of society occurring parallel to inshore commercial activities. In many ways the situation surrounding subsistence fishers both reflects and provides an illustration of other political maladies in South Africa, and the process underway to redress the problems has relevance in the broader social context.

This paper describes the process undertaken to develop recommendations for the management of subsistence fisheries in South Africa. It also provides an outline of the products that resulted from the process and a review of the opportunities presented, constraints that existed, and the lessons learnt. Few overviews of this kind exist in the formal literature, despite the clear need for guidance on the development of management systems for such fisheries. This is the first paper in a suite of seven contained in this volume. Five others cover the research undertaken to inform the process, and the last provides a detailed description and rationale for the recommendations.

POLICY AND LEGISLATIVE CONTEXT

Following the election of the first democratic government in South Africa in April 1994, many policies and laws were revisited (Cochrane 1995, Hutton *et al.* 1997). In an attempt to achieve a new fisheries policy acceptable to all, a Fisheries Policy Development Committee was set up by the Minister of Environmental

Affairs and Tourism in April 1995. This Committee included representatives from the fishing sector, provincial governments and environment advocacy groups, as well as from Fishing Forums, which had been formed to represent fisher interests at local level. The history and evaluation of the new fisheries policy development is described in detail in Cochrane (1995), Hutton and Pitcher (1998), Martin and Nielsen (1998) and Hersorg and Holm (1999). The Fisheries Policy Development Committee appointed an Access Rights Technical Committee in 1996, with the goal of ensuring fair and equitable access to fisheries stocks while achieving long-term sustainability of resource use. This was an important step for subsistence fishers, because it was the first process to recognize them specifically as a sector and to explore ways to formalize their activities. In its report, the Access Rights Technical Committee accepted the principle of subsistence harvesting but advocated that it must be managed and controlled because some resources harvested by subsistence fishers had been seriously depleted in parts of the country (Branch *et al*. 1996, van der Elst *et al*. 1997). It touched issues such as the problems of the sale of resources by subsistence fishers, preferential rights, conflicts between recreational and subsistence fishers, poaching activities and possible management models. The Access Rights Technical Committee supported the concept of a separate type of licensing system for subsistence harvesters that would recognize that their needs are different from those of either commercial or recreational users. During the lengthy period leading to new fishing policy (Anon. 1997), the Fisheries Policy Development Committee decided that all possible options should be explored to expedite the access to marine resources by subsistence fishers. A document entitled "Interim Relief Measures for Subsistence Fishers" resulted from this investigation and provided valuable preliminary definitions, estimations of numbers of subsistence fishers and the status of potential stocks, and management and control measures (van der Elst *et al*. 1996).

The process of revising fisheries policy in South Africa culminated in the promulgation of the Marine Living Resources Act No. 18 (MLRA; Anon. 1998a), which came into effect on 1 September 1998 and replaced the Sea Fisheries Act (Anon. 1988). It recognizes subsistence as a formal sector and defines a "subsistence fisher" as "a natural person who regularly catches fish for personal consumption or for the consumption of his or her dependents, including one who engages from time to time in the local sale or barter of excess catch, but does not include a person who engages on a substantial scale in the sale of fish on a commercial basis". It also allows for the establishment of areas or zones where subsistence fishers may fish, the identification of subsistence fishers and/or communities, exclusion of other fishers from subsistence areas, and the issue of subsistence permits. This was a significant development for fishers in South Africa who depend on marine resources for food. However, implementation of the terms of this Act with regard to subsistence fishing presents a major challenge. This sector was not recognized legally in South Africa prior to 1998, and was largely dealt with by law enforcement. Consequently, management systems were never developed for these fisheries and little information about the fishers or their use of resources was available to inform the process of formalizing and controlling their activities. A few exceptions did exist where provincial authorities had local arrangements and issued permits for limited subsistence fishing (e.g. Sokhulu in KwaZulu-Natal and Ebenhaeser in the Western Cape; see Harris *et al.* in press and Hauck and Sowman 2001). However, structures for monitoring, permit systems, allocation procedures, communication systems, and research were rare and experimental. Lessons from other parts of Africa indicate that special systems of management that differ from those for commercial and recreational fisheries are required for subsistence fisheries (Hara 1999), and that biological and social perspectives need to be incorporated (Horemans 1998). It is also clear that developing acceptable, practical, equitable solutions requires better information about the fishers and the resources (Hopper and Power 1991), and that principles of shared decision-making, including use of local knowledge, need to be explored.

AGENTS OF THE PROCESS

Subsistence Fisheries Task Group

The need to investigate thoroughly and to consult widely about subsistence fisheries in South Africa was recognized by the national agency responsible for the management of marine living resources, Marine & Coastal Management (MCM) of the Department of Environmental Affairs and Tourism. As a consequence, a Subsistence Fisheries Task Group (SFTG) was appointed in December 1998, with the charge of gathering information, overseeing any necessary research, and consulting widely to develop and make recommendations to implement management of subsistence fisheries in line with the new MLRA.

The composition of the SFTG was decided by the Chief Director of MCM, following the preparation of

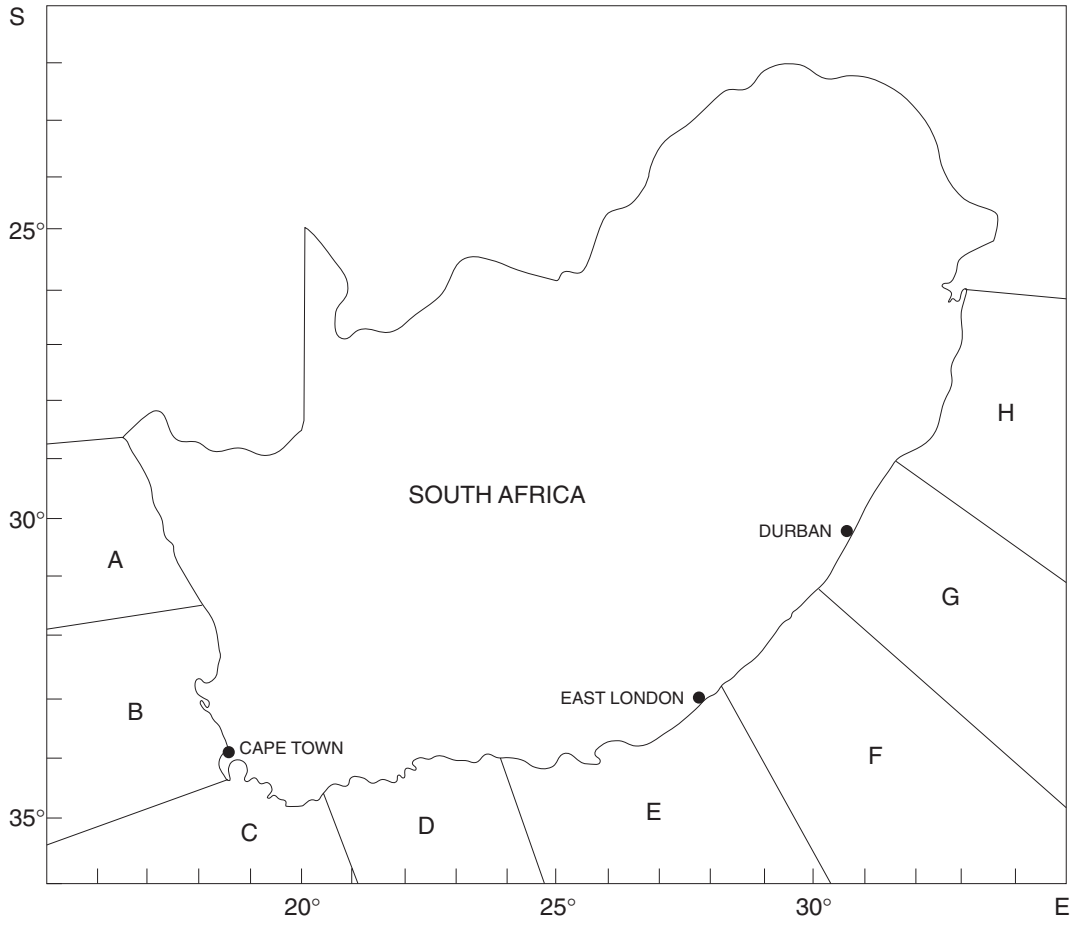

Fig. 1: The eight regions delineated around the coast of South Africa to investigate the number and profiles of subsistence fishing communities, and to consult and communicate with subsistence fishers: A = Northern Cape (Namibia border to Olifants River), B = Western Cape (Olifants River to Hout Bay), C = Western Cape (Hout Bay to Breede River), D = South Coast (Breede River to Tsitsikamma National Park), E = western Eastern Cape (Tsitsikamma National Park to Kei River), F = eastern Eastern Cape (Kei River to Mtamvuna River), G = southern KwaZulu-Natal (Mtamvuna to Umvoti River), H = northern KwaZulu-Natal (Umvoti River to Moçambique border) – see Clark *et al.* (2002) for further details

a list of nominees at a meeting (chaired by MCM) in November 1998, attended by key individuals involved in various aspects of informal fisheries management and research. The SFTG consisted of two interacting groups (Core and Consultative). Both contributed to fulfilling the terms of reference, but played different roles. The C*ore Group* comprised 13 people (plus three alternates) with divergent areas of expertise and experience: two fisher representatives, a compliance officer, a community conservation officer, an economist, a criminologist, two social scientists, an environmental educator, two environmental management experts, a fisheries scientist and four marine biologists. Further, it was ensured that sufficient knowledge about the four different coastal provinces of South Africa was contained in the group. The core group met regularly, steered and co-ordinated the process, and produced the recommendations for the implementation of subsistence fisheries. It also convened various working groups to tackle specific issues, organized a national workshop and a series of "roadshows" to interact with fishers and regional authorities, and co-ordinated research

programmes that sought information about the nature and distribution of subsistence fishers.

The *Consultative Group* consisted of a larger body of 20 people with a wide range of interests and knowledge, and provided information and support to the Core Group. It included scientists, compliance staff, economists, a coastal policy specialist, a lawyer, a coastal development consultant, and a fisher representative. Consultative Group members played an important supportive role in disseminating information, commenting on proposals and recommendations, consulting with stakeholders and providing specialist input. They attended Core Group meetings when their specialist expertise was needed for specific topics.

The Core Group met formally 12 times between December 1998 and January 2000. These meetings allowed identification of key areas of focus and priority tasks and ensured coordination of the programme and interaction between members. However, many of the meetings were also used to debate and workshop key issues. Minutes were kept for each meeting and circulated to members of the Consultative Group for comment.

The first task of the SFTG was to develop its terms of reference, which were reviewed and approved by the Chief Director of MCM prior to adoption:

1. Define subsistence fishers, and recognize different categories.
2. Identify functional zoning areas that would be appropriate for subsistence fishers, after consideration of the nature of (a) local fishing communities and (b) specific stocks.
3. Ensure that mechanisms exist to produce recommendations on the proportions of individual stocks that should be allocated to subsistence fishers, and how these should be allocated (and resolve who is responsible in each case). Take responsibility for integrating information on these allocations and transmitting it to the appropriate Director.
4. Identify the protocol necessary to involve local communities and relevant authorities in the procedures developed above, and in their implementation.
5. Recommend management models and processes of implementation, which include management, monitoring, compliance, training and research that would be appropriate for each subsistence category, zone or resource.
6. In cases where resources can sensibly sustain such activities, develop guidelines and mechanisms to consider the formation of small-scale commercial fishing groups as an alternative to subsistence harvesting for food and provide advice on how MCM can assist in this process.
7. Review proposals for research funded by MCM that is related to subsistence fishers, and collate information on all such research, irrespective of the source of funding.

Outsourcing tasks

All members of the SFTG were employed full-time elsewhere, and therefore could not devote their entire attention to the process. Given the magnitude of the task and the tight timeframes for delivery of recommendations (~1 year), it was decided that a number of full-time temporary staff and consultants should be enlisted. A National Co-ordinator was appointed for six months to oversee the activities of eight Regional Fieldworkers who covered the following coastal regions: northern KwaZulu-Natal, southern KwaZulu-Natal, the eastern portion of the Eastern Cape (Transkei), the western section of the Eastern Cape, South coast, Western Cape (×2), and Northern Cape (Fig. 1). The role of the Regional Fieldworkers, who were drawn from the regions and employed for five months, was to establish contact with fishing communities, inform and consult with the fishers, organize workshops and public meetings in each region, and to conduct field research (see Fig. 2). The SFTG twice provided the team of Regional Fieldworkers with specific intensive training. At the outset, training was designed to familiarize them with the goals of the SFTG and the legislation. Later, training focused on survey techniques to ensure a consistent approach. In addition, two communication and media consultants were contracted, and specific research contracts were outsourced to institutions, notably the Centre for Marine Studies at the University of Cape Town, Anchor Environmental Consulting, Pondocrop, the Department of Ichthyology and Fisheries Science at Rhodes University, and the Oceanographic Research Institute.

KEY ACTIVITIES

This section outlines the activities coordinated by the SFTG to gather information about subsistence fishers and the resources they use, investigate management models, and obtain input from, and communicate with, fishers and local authorities. The knowledge gained through these activities was used to formulate relevant, acceptable and practical recommendations for the management of subsistence fisheries (Harris *et al.* 2002). The processes followed and interactions of the various players are depicted in Figure 2. Political will to formalize this previously marginalized fishing sector was demonstrated by the national Minister of Environ-

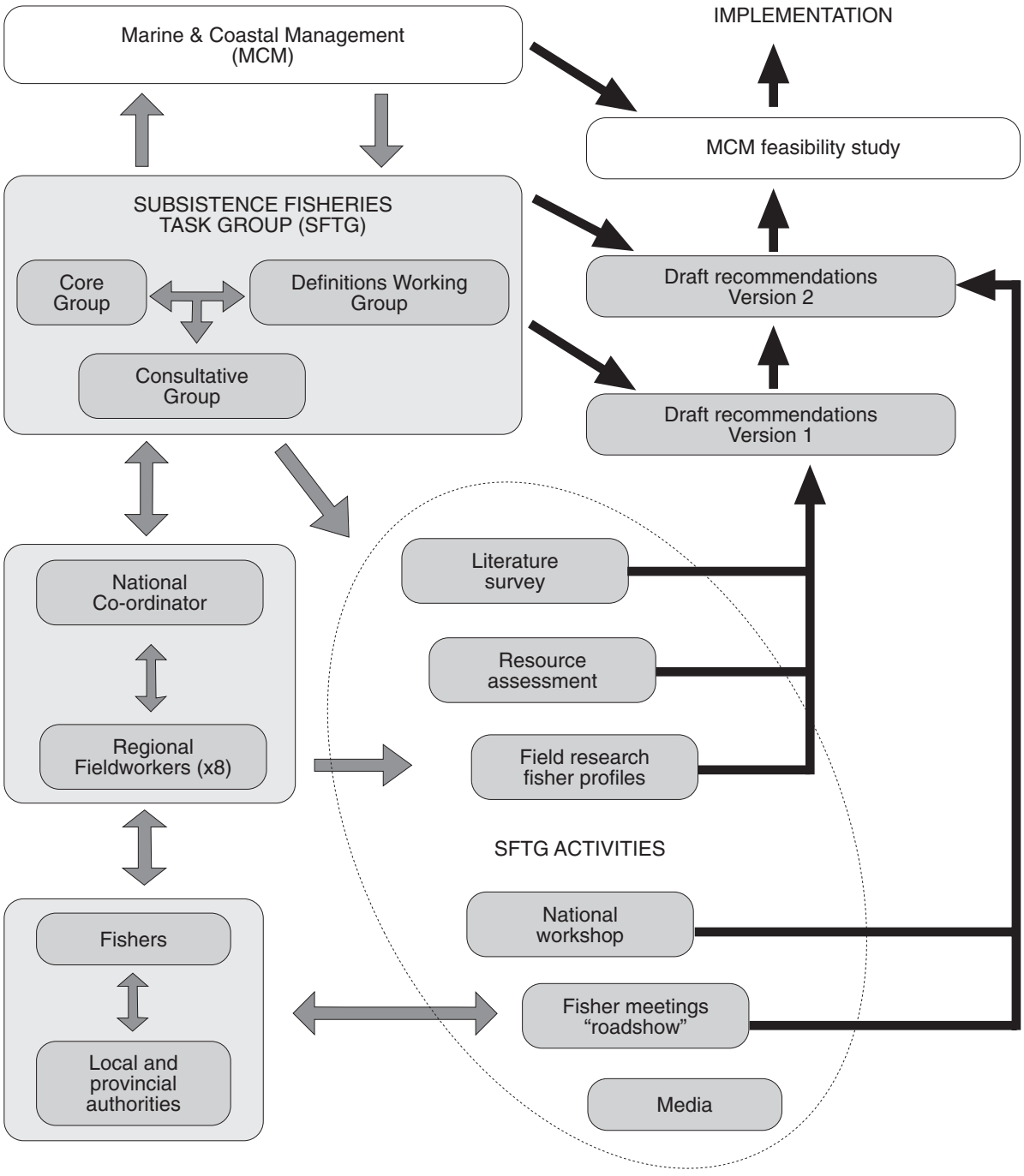

Fig. 2: The mechanism of developing recommendations for subsistence fisheries management in South Africa: activities, agents and stakeholders, and their roles and interactions

mental Affairs and Tourism who expressed the desire to grant rights by early 2000, and this set the pace of the timetable for activities.

Defining subsistence

A key issue was that of defining subsistence fishing, because the definitions in the MLRA were inadequate and knowledge about the profiles of fishers too poor to allow identification of those who should qualify for subsistence rights. While *a priori* clarity on the definition would ideally have provided a common understanding and basis for further work of the SFTG, it was recognized that the precise definition of "subsistence" should emerge from the process itself. Therefore, an iterative process, informed by research findings and the views of fishers, was adopted to evaluate the definition of subsistence, and to develop criteria for identification of subsistence fishers. The details of the process followed in developing these definitions and criteria, and the resulting recommendations, are described in Branch *et al.* (2002a).

Research

Learning from experience of others — A literature survey of subsistence fisheries management in South Africa and internationally was commissioned to provide information on management models and other key issues and lessons related to subsistence fisheries management (Hauck 2000).

Field data-gathering programme: fisher identification and socio-economic profiles — To gather information about subsistence fishers, the SFTG conducted field research involving workshops and interviews with fishers and managers. Because the definition of a subsistence fisher was itself under investigation, the Regional Fieldworkers were instructed to interact with all informal fishers and not to prejudge their legitimacy as subsistence fishers. The survey therefore included all fishers who considered themselves to be "subsistence" or who were currently engaged in informal or illegal activities. The field programme was divided into two phases. During the first phase (May–June 1999), the eight Regional Fieldworkers interviewed key individuals (researchers, local authorities, members of non-governmental organizations) with knowledge of subsistence and informal fisheries in each of the eight regions delineated around the coast of South Africa (Fig. 1), and identified potential subsistence fishing communities. They also obtained basic information about the number of fishers in each community, the kinds of fishing activities and the types and quantities of resources harvested (Clark *et al.* 2002). In the second phase of the field programme (July–September 1999), 20 communities were chosen as test cases out of the approximately 147 fishing communities identified in the first phase. These communities were selected to cover all eight regions and the range of subsistence and informal fishing activities identified in the initial phase. They were investigated in greater detail to obtain information on socio-economic circumstances, current management systems, fisher perceptions and problems, and the nature and mode of use of resources. In each test community, the Regional Fieldworker, working together with a facilitator and an assistant employed by the SFTG, conducted workshops with fisher groups, interviewed individual fisher households, surveyed local shops for resource substitution-costs and a poverty index, and interviewed key informants in the community (Branch *et al.* 2002b).

Assessing resources for subsistence use — The SFTG commissioned a study to determine the availability and suitability of different marine resources in South Africa for subsistence use. Fisheries scientists were tasked with providing a critique of the situation in each of the provinces with which they were most familiar. Information was obtained from published literature and data sources and individual scientists knowledgeable about of the resources and areas. The findings are contained in a detailed unpublished report by Van Zyl (2000) and summarized by Cockcroft *et al.* (2002).

Communication and consultation

Media programme — The SFTG embarked on a media initiative that both served to inform the fishers and regional/local authorities of the activities underway, and to determine appropriate means of communicating information to subsistence fishers in the future. Three main communication actions were effected. First, information about the new MLRA and the activities of the SFTG was communicated to subsistence fishers by radio and newspaper releases. An independent journalist was contracted for this task and worked closely with the media section of MCM. Second, a full colour brochure was printed in four languages and distributed early in the process to subsistence fishing communities, local authorities and relevant non-governmental organizations. The purpose of the brochure was to inform fishers and local authorities of the new MLRA and its implications for subsistence fishers, and to notify them of the appointment of the SFTG and its terms of reference. Last, approximately 3 000 copies of letters that explained the actions being taken by MCM and

the SFTG and requested assistance in implementation were sent to non-governmental organizations, provincial and local authorities, scientists, representatives of fisher groups and interested and affected parties.

National Workshop — The SFTG organized a two-day National Subsistence Fisheries Workshop in October 1999, which was attended by management authorities, fisher representatives, scientists and SFTG members, and facilitated by an independent consultant. At this workshop, the SFTG presented the results of the fieldwork and research, and obtained feedback on its preliminary proposals (Venter 2000).

Consultation and communication with fishers and local authorities — The SFTG considered it essential that subsistence fishers and local authorities be informed and consulted during the process of developing recommendations for management of their activities. Therefore, in addition to the media thrust and field programme, the SFTG embarked on a "roadshow" of public meetings to meet with fishers and local authorities. In all, 25 meetings were held in November 1999, two in the Northern Cape, five in the Western Cape and six in each of the South Coast, Eastern Cape and KwaZulu-Natal. The Regional Fieldworkers organized the meetings at local level, and arranged venues and transport so that representatives from up to five individual communities could attend each meeting. In this way, representatives of at least 50 communities in total were involved. At the "roadshow" meetings, fishers and local authorities were invited to interact with MCM and SFTG representatives. A standardized illustrated talk, which summarized the sections of the MLRA that pertained to subsistence fishers, described the role and activities of the SFTG, and presented preliminary recommendations, was given in the appropriate language by a trained presenter to ensure consistency of the message (Matthews *et al.* 2000).

Fieldworker debriefing — Because the Regional Fieldworkers had the opportunity to interact closely and informally with fishers for about five months in each region, they gained valuable insights about the fishing activities in each region and about the concerns of the fishers. The SFTG took the opportunity to "debrief" them to document their experiences and perceptions, and this information also contributed to the recommendations.

Formulation of recommendations by the SFTG

In formulating its recommendations, the SFTG drew on the research findings and information contained in six commissioned reports (Clark 2000, Russell *et al.* 2000, van Zyl 2000, Venter 2000, Matthews *et al.* 2000, Hauck 2000)[1], as well as on the information and insights gained during the other activities and investigations described above. Preliminary recommendations were presented for comment to fishers and local/regional and national management authorities at the national workshop. A subsequent draft of the recommendations was circulated for comment to the Consultative Group members and the national workshop participants, and amended to take their comments into account. The insights and information contained in two reports that were produced by the Access Rights Technical Committee (Branch *et al*. 1996) and the Fisheries Policy Development Committee (van der Elst *et al*. 1996) were incorporated in the deliberations of the SFTG. Continuity between these earlier processes and that of the SFTG was further ensured because both of the chairpersons of these earlier committees/task teams were members of the SFTG, and five of the SFTG members had previously served on the task teams appointed by the Fisheries Policy Development Committee.

OUTCOMES AND PRODUCTS

Documenting process, deliberations and information

The six detailed commissioned SFTG reports[1] cited above were used extensively by the SFTG as reference material in preparing its final recommendations (SFTG 2000). Seven papers derived from this work (including this one) are published in this volume to provide a case study for subsistence fisheries management. A brief description of the contents of each report and paper is given below. Explicit recognition of the reports and papers as products of the process is important, given the sparse documentation of similar processes worldwide.

Definition — A clear definition for subsistence fishers with associated criteria was a central issue. It was also contentious and difficult to obtain consensus on it. This was partly because the nature of fisher activities spans a continuum from fishing for food to industrial profit-making and it is therefore difficult to identify

[1] The commissioned SFTG reports are held by the Gilchrist Library, Marine & Coastal Management, Department of Environmental Affairs and Tourism, Private Bag X2, Rogge Bay, 8012, South Africa

criteria that clearly divide sectors. In addition, because of the political history of fisheries in South Africa, subsistence rights have come to be seen as a "catch-all" solution to the granting of rights to all informal fishers, whether they are true subsistence harvesters or marginalized commercial fishers. The process of developing a new definition drew on international experiences, research and consultation with fishers. The research provided information on the nature of activities and resources harvested, and on the social circumstances of the fishers, whereas fisher meetings ("roadshows") and the national workshop highlighted the issues and concerns of fishers. The SFTG evaluated the current definitions in the MLRA for both subsistence and commercial fishers and found them to be inadequate because they neither characterized these users nor provide sufficient precision for practical or legal implementation. To replace them, the SFTG recommended a new definition for subsistence fisheries, with accompanying criteria. It also recommended introduction of a new small-scale commercial sector to accommodate the large number of informal fishers who currently sell their catches, and who wish to make a living out of their activities without aligning themselves with formal industrial fisheries. The recommended definitions and the background and full explanations for them appear in Branch *et al.* (2002a).

Review of literature on artisanal and subsistence fisheries — In general, literature on artisanal and subsistence fisheries was difficult to obtain, partly because of the limited research in this area, but also because documentation that does exist is largely not published in the formal literature. Hauck (2000) reviews definitions used internationally, and notes that terminology and definitions used for subsistence, artisanal and small-scale fisheries are inconsistent. The SFTG did, however, appreciate that consistency was not necessarily a goal to be striven for, because definitions are context-specific, and the circumstances of "subsistence harvesting" differ widely from country to country. Common threads did, however, emerge. Subsistence fishers are invariably poor, and their activities tend to be rooted in history and culture and often undertaken by a sector of the population that has been politically marginalized. Management systems for subsistence and artisanal sectors have focused on a few common principles. These include the use of local or traditional knowledge, co-management (shared decision-making between government and resource users), and the establishment of clear prioritization of the allocation of resources to subsistence in preference to recreational and commercial fishery sectors in times of shortage (Fall 1990). Co-management is highlighted in the literature on subsistence and artisanal fisheries, although it is recognized that this management system may not work under all circumstances (Pinkerton 1989, Berkes *et al.* 1991, 2001). Hauck (2000) also describes a case study of implementation of subsistence fisheries management in Alaska, one of the few regions where the process and research have been extensively documented (Fall 1990). Further, she describes the Programme for Integrated Development of Artisanal Fisheries in West Africa, which was initiated in 1983 to develop and manage their artisanal fisheries. The key feature of that programme was that it was based on participatory and integrated approaches (Horemans and Jallow 1997). It is clear from Hauck's review that the theoretical debate relating to subsistence fisheries is scarce and often located in unpublished informal literature. Research on all aspects is depauperate. Although the South African context has unique features, documentation in the formal literature of the process undertaken here will contribute to the international pool of knowledge and should generate further discussion and conceptualization about subsistence fisheries management.

Identification of subsistence fisher communities, areas and resources — The nationwide survey undertaken to identify subsistence fishers, fishing areas, activities and types of resources around the coast of South Africa is described in an unpublished report (Clark 2000), and the results are synthesized in another of the current series of papers (Clark *et al*. 2002). This survey, which was informed by researchers, authorities and community leaders rather than fishers themselves, identified 147 communities that engaged in informal fishing of either a subsistence or small-scale commercial nature. It provided a preliminary estimate of about 20 000 households engaged in these activities and approximately 30 000 individual fishers, clearly more concentrated on the East and South coasts than on the West Coast. In all, 12 categories of subsistence and small-scale commercial fishing activities were identified, based on the gear, habitat and types of resources used. The survey also provided initial information about the patterns of resource use, e.g. most fishers operate over relatively short distances from where they live (<20 km). The species harvested by subsistence fishers were listed, and recommendations made on their suitability for use by subsistence fishers. Numerous problems voiced about the management and regulation of these fishers were recorded.

Socio-economic and resource-management profiles of subsistence fishers — The second phase of field research dealt directly with fishers in 20 selected

communities and provided case studies on the socio-economic characteristics and lifestyles of subsistence and informal fishers in South Africa. The initial analyses of the large dataset generated by this study are contained in an unpublished report (Russell *et al.* 2000), and distilled in another of this series of papers (Branch *et al*. 2002b). The study provided important information on the demographic and social characteristics of informal resource users, revealing distinct gender differences with regard to different types of harvesting and different regions. Significant differences were found between the poverty profiles of fishers in the different provinces, with households on the East Coast more poverty-stricken than those on the West Coast. Similarly, the purpose of the harvest differed geographically. On the West Coast, a much greater proportion of fishers reported that they sold their catch and expressed a preference to becoming legally recognized as small-scale commercial fishers rather than subsistence fishers. A wide range of resources was reportedly harvested, including low-value resources such as mussels and limpets as well as high-value resources such as West Coast rock lobster *Jasus lalandii* and abalone *Haliotis midae*. The harvesting methods varied greatly although most involved low-technology, unsophisticated gear. Most harvesters have limited alternative opportunities for supporting their livelihood. The study clearly demonstrated that the informal sector is not a homogenous group, but includes a spectrum of activities from those that "consumed most" of the harvest to those that "sold all" of their catch. It also provided information about the perspectives of fishers with regard to their relationships with management agents and other fishing sectors, which were generally poor and involved conflict. It suggested that enforcement has not served as a major deterrent to the informal activities. Instead, illegal and informal activities operated unfettered in many places with consequent problems of resource depletion.

Assessment of the availability of marine resources for subsistence fisheries — Information on the historical and current exploitation levels and the status of stocks being harvested by the informal fishing sector is provided in an unpublished report (van Zyl 2000). This work complements a separate study dealing specifically with the status of fish (Mann 2000). These include detailed information about each individual harvested species or group of species, covering their distribution and abundance, exploitation history, stock status and biology (reproduction, growth, trophic level, etc.). The van Zyl (2000) report deals with 40 fish species, five worms, 19 crustaceans, 28 molluscs, three echinoderms, one tunicate and five species of marine algae. For each species an assessment is made of its suitability for subsistence and/or small-scale commercial fishing, plus a recommendation as to the required management approach. This species-by-species inventory is complemented by another paper in this series (Cockcroft *et al.* 2002), which provides an overall analysis of the availability and suitability of different resources for subsistence fishers in South Africa, and contrasts the applicability of various management procedures for subsistence versus commercial fishing. That paper emphasizes that high-value resources such as abalone and West Coast rock lobsters are better reserved for small-scale commercial and industrial use than for subsistence fishing, because they can generate commercially viable yields. It also stresses that the overall management strategy for the subsistence sector must take into account regional and site-specific requirements, incorporate co-management, protect traditional fishing practices and avoid user conflict, while also ensuring sustainable utilization. Management options suggested for subsistence fisheries include: (1) restrictions on gear to reduce bycatch, (2) limitations on where fishers may harvest and sell their products and a specification that harvesting must be undertaken personally, (3) bag limits for individual species or "baskets" of species, and (4) exclusive allocation of zones of the shore for use by subsistence harvesters. Conversely, some modes of control may be inappropriate for some subsistence fisheries, e.g. total allowable catch or effort, and closed seasons.

National workshop on subsistence fisheries — This workshop provided a forum for the SFTG to report its activities, and the information gained through research, to representatives from the fishing sectors, NGOs, regional authorities and MCM. Important presentations were given by the eight Regional Fieldworkers whose observations and perspectives were invaluable considering their close interaction with the fishers. The workshop also allowed a mid-process review in that feedback was obtained on the preliminary recommendations, particularly the draft definitions of subsistence fishers and the need to recognize a "small-scale commercial" sector to accommodate informal fishers who fish for profit. Fisher representatives, Regional Fieldworkers and some SFTG members expressed dissatisfaction about the tight time frames driving the process, and inadequacies in the consultation and the decision-making process. In an effort to address these concerns the workshop agenda was changed to allow a session of small-group discussions aimed at identifying problem issues and solutions. A number of key issues were raised, the most significant being:

(i) Fishers voiced concern about the extent of direct communication between the SFTG (and MCM)

and the fishers, and the timing of proposed "roadshow" meetings. It was resolved that the SFTG's final recommendations would only be produced after "roadshow" meetings had been completed, so as to allow incorporation of fishers' concerns.

(ii) Fishers identified a number of fishing communities that had not yet been included in the process. This provided an opportunity to incorporate communities that had been overlooked.

(iii) Fisher representatives felt that the SFTG composition had been biased towards technical and academic disciplines.

(iv) Concern was raised by some SFTG members that MCM was not engaging strongly enough in the process, and did not appear to be preparing itself for the necessary evaluation and implementation of recommendations.

(v) Difficulties had been experienced with regard to briefing and support of fieldworkers, and were attributed mainly to tight deadlines.

(vi) The Regional Fieldworkers felt that they could have contributed more to the process if they had been included in the main activities of the Core SFTG, including meetings and formulation of recommendations.

(vii) There was general concern that the process was being rushed and that this would influence the relevance and viability of the recommendations it produced.

(viii) Concern was raised that funding constraints may have limited fieldworker activities, identification of fishing communities and communication during the process.

The workshop also provided feedback about suggested management approaches and models, allocation procedures, monitoring and compliance, and resource identification and assessment, and these are contained in the workshop proceedings (Venter 2000). "Debriefing" of the Regional Fieldworkers at this workshop provided valuable additional information on fishers' perspectives that had not been formally incorporated in other reports (Hauck *et al*. 2002).

"Roadshow" presentation, fishers' concerns and questions — An unpublished SFTG report documents the content of the standardized presentation given by the SFTG and the questions raised by informal fishers at public "roadshow" meetings held around the coast (Matthews *et al.* 2000). In most cases the "roadshows" were the first time that fishers had ever interacted directly with representatives of the national management agency (MCM). Fishers expressed frustration at poor communication systems and a perceived denial of legal access to resources. Mistrust about the motives of the authority was also a common theme, especially as many fishers considered the resources to be community property falling outside national jurisdiction. Another paper in this series documents the perceptions of subsistence and informal fishers about management of, and access to, living marine resources (Hauck *et al.* 2002).

Recommendations for subsistence fisheries management

Figure 3 provides an overview of the policy and legislative history, and the activities of the process described in this paper, which culminated in recommendations for management of subsistence fisheries in South Africa. In reviewing the information gained by the research and the issues and problems raised during consultation, the SFTG resolved that a number of aspects required attention if effective and workable management of subsistence fishers is to be achieved (Table I). The recommendations for implementation of subsistence fisheries management submitted by the SFTG were guided by these needs and cover the following focus areas: definitions, assessment and categorization of resources, management systems, communication mechanisms, application and allocation procedures, capacity building, compliance mechanisms, research and monitoring, and provisioning of the management of this new sector. The rationale and detailed descriptions of each recommendation are provided in the report submitted to MCM (SFTG 2000), and in the last paper of this series (Harris *et al.* 2002).

EVALUATION OF THE PROCESS

A major problem encountered by the SFTG was the scarcity of published documentation of case studies on subsistence fishing to guide the process and provide insights. Exceptions were accounts of subsistence fisheries in Canada and Alaska (Berkes 1990, Fall 1990). Consequently, it was considered important not only to document the process in formal literature, but also to critically evaluate it and to highlight the lessons learnt and constraints experienced, and to identify the opportunities the process provided. The constraints, lessons learnt and opportunities afforded by the process are discussed below and summarized in Table II.

The process followed by the SFTG for the most part succeeded in meeting the terms of reference within the allotted time and provided recommendations for a new definition for subsistence fishers, identification of subsistence fishers and resources, and management models. However, difficulties and obstacles were encountered and mistakes were made. This is not sur-

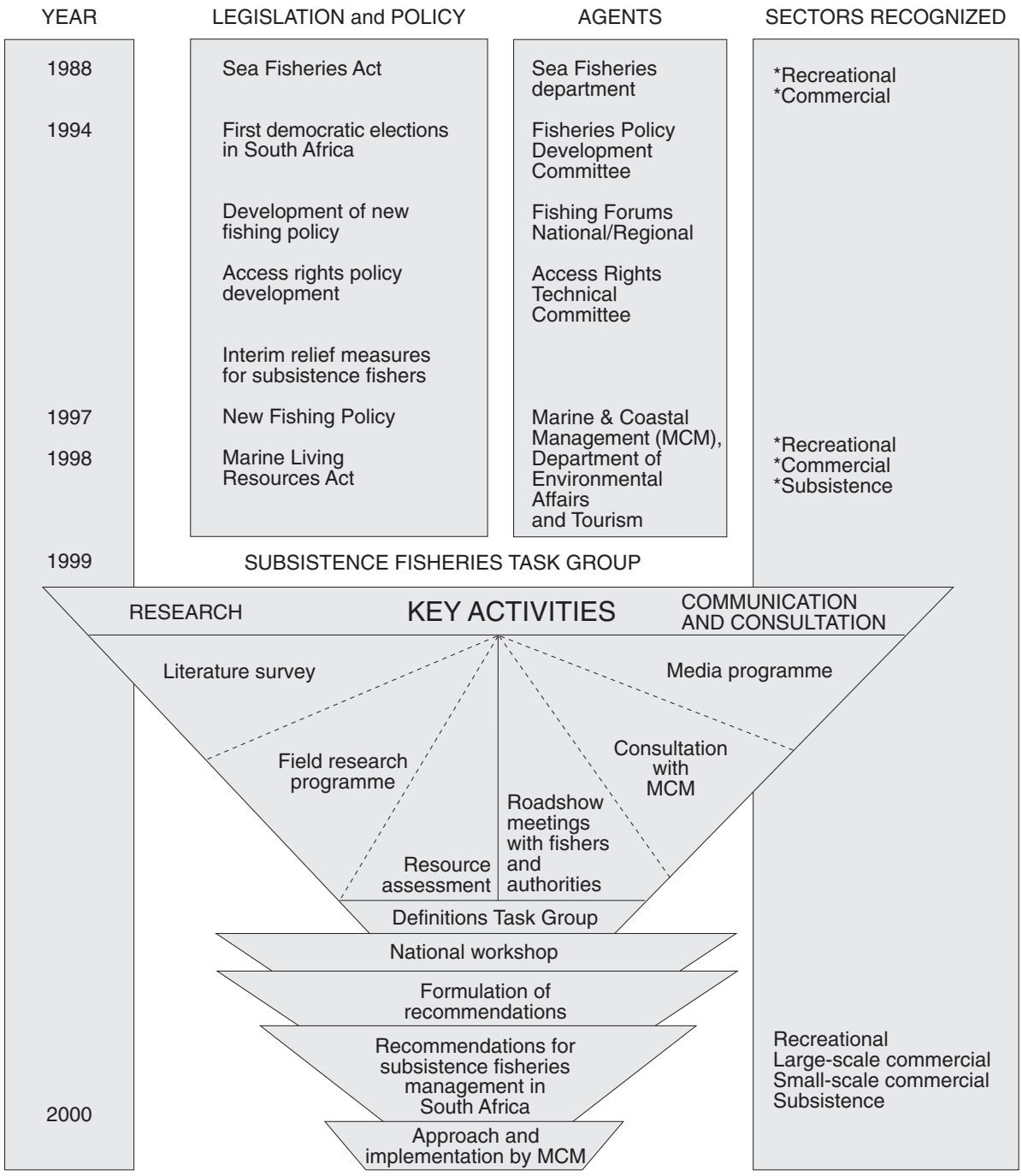

Fig. 3: The historical background, policy and legislative framework, and the process followed by the Subsistence Fisheries Task Group in formulating recommendations for the management of subsistence fishers in South Africa

Table I: Focal areas for which the Subsistence Fisheries Task Group developed recommendations for the implementation of subsistence fisheries management in South Africa

Focal areas requiring attention	Motivational drivers
Adequate time schedule for implementation	Fisher expectations for access rights Political pressure to deliver
New definition for subsistence fishing	Inadequate definition in Marine Living Resources Act Information on fishers and their activities gained during process necessitated amendment of definition New sector identified = small-scale commercial
Assessment and categorization of resources use	Unsustainable use of some resources Equitable allocation amongst sectors required High-value resources not appropriate for subsistence use, better allocated for small-scale commercial use
Establishment of appropriate dedicated management structures	No formal structures exist at national level Few local and provincial structures address subsistence fisher management, and the few existing structures are inconsistent and informal
Effective communication systems between fishers and authority	Mistrust and conflict exists Communication channels do not reach fishers New policy and legislation not always communicated to fishers
Application and allocation procedures	No existing procedures Procedures developed for recreational and commercial fisheries inappropriate
Training and capacity building	Lack of organizational skills among fishers Lack of understanding of Marine Living Resources Act among local authorities Conflict between fishers and authority: facilitation needed Basic fisheries management knowledge lacking among fishers and local authorities
Compliance mechanisms	Existing law-enforcement approach failing Overexploitation of many resources Conflict severe between authorities and fishers Poor understanding and cooperation from fishers
Research and monitoring	Unknown stock status for most subsistence species Effects of subsistence harvesting techniques on sustainability must be determined Fishers mistrustful of research results Indigenous knowledge largely ignored
Financing management of this new sector	Not previously catered for in national budget, and are an additional responsibility Additional staff required nationally and regionally

prising considering the uncharted terrain, complexity of the problems being addressed, tight time-schedules, and the highly political nature of the subject. In hindsight it was unfortunate that explicit mechanisms to evaluate the process and the outcomes were not planned at the outset. Nevertheless, some activities did provide for assessment of the process, including the national workshop and "roadshows", and these influenced both the direction and emphasis of the process as well as the final recommendations. The appointment of a Consultative Group in addition to the Core SFTG provided a mechanism for external input and evaluation at all stages of the process.

Following the submission of the recommendations of the SFTG in January 2000 (SFTG 2000), MCM conducted an internal study to evaluate them and assess the feasibility and implications of implementing them, and communicated their views to the SFTG in a joint meeting (Augustyn *et al.* 2000). The recommendations were accepted largely unchanged by MCM, who assumed responsibility for implementation. Frustrating delays, however, bedeviled the implementation phase, and the causes of these delays lie largely in the problems highlighted below, among the "lessons learnt" and "constraints experienced" during the process.

Opportunities

Rectifying past inequities — The new legislation enacted for marine fisheries in South Africa (Anon. 1998a) was aimed at correcting past inequalities with regard to access to resources, and therefore presented a major opportunity for fishing communities that had been marginalized or excluded in the past. The creation of the SFTG was the first step towards giving substance to recognition of subsistence fishers and the need for a fair and adequate system of management for them.

Table II: Summary of the opportunities presented, the constraints that existed and the lessons learnt about the process used to develop recommendations for the management of subsistence fisheries in South Africa

Opportunities	Constraints	Lessons learnt
Develop nationally appropriate means of implementing subsistence fisheries	Time scale short and set politically	Plan time schedule rationally and in advance
Redress past attitudes and lack of attention to this subsistence sector. Improve the equity of resource allocations	Communication difficulties; isolation; language barriers; illiteracy; not all media accessible to fishers	First-hand contacts with fishers essential. Use appropriate media and local languages or translators, and encourage local level management models
Enhance scientists' and managers' knowledge of needs and nature of subsistence fishers	SFTG consisted of voluntary, part-time participants	Full-time coordinator, support-staff and fieldworkers essential
Raise awareness among fishers about policies relating to fisheries management	SFTG was multidisciplinary and representative of interested parties, but not proportionally representative of society	Task groups should be multidisciplinary and include representatives of all parties from inception
Introduce new participatory management approaches. Create a chance for fishers to influence decisions	Capacity inadequate at MCM and regional agencies. Buy-in to process inadequate	Need to build infrastructure and capacity among agencies, and train staff. Extension staff needed to act as bridge between agencies and fishers
Improve resource management, given unsustainable nature of illegal activities and methods	Funding restricted and inaccessible because of clumsy administration	Assess funding needs in advance and provide for them in a realistic and accessible manner. Seek additional external funding. Realize long-term government responsibility for funding
Improve understanding of, and compliance to, regulations	Paucity of publications on processes for developing subsistence fisheries	Formal publications needed to document and disseminate information
Provide a documented case-study of process of policy implementation, including lessons learnt	Paucity of information about the fishers at the outset	Develop an evaluation procedure at the start of the process
Network subsistence fishers with other coastal policy initiatives	Stocks of most species already fully or overfished	Re-allocation of resources between sectors is necessary

Enhancing knowledge — The process followed by the SFTG acted as a catalyst for scientists and managers to enhance their understanding of the real issues and concerns of subsistence fishers, and indigenous knowledge, and to integrate these into planning and management frameworks. Similarly, the patterns of resource use and availability were investigated for the first time on a national level. The exercise also provided an opportunity for the collation of information about existing local initiatives involving subsistence fisheries, and the recognition of these as useful case studies.

Raising awareness among fishers — An opportunity to raise awareness among fishers about the new policies and legislation relevant to marine and coastal management was created by the process. In addition, principles of basic fisheries management and sustainable resource use were conveyed to representatives of at least 50 communities during the "roadshow" meetings, by means of illustrated presentations.

Establishing new management models — The process provided the chance for re-evaluation of the effectiveness of existing systems of management, and to develop new and unique approaches that address the needs and perceptions of fishers, incorporate the information and insights of the scientific community and take cognizance of the practical constraints and requirements identified by experienced compliance-staff in the field. It also compelled exploration of alternative forms of management that embrace the principles of participation and equity, as enshrined in the national constitution.

Effecting new policies and legislation — Evaluation of the activities undertaken provided important lessons with regard to appropriate methods and approaches for implementation and management of subsistence fisheries, and the constraints and problems that must be overcome. Although these were developed in the South African context, they provided insights generally applicable to subsistence and artisanal fisheries worldwide, and their documentation here will allow comparison to be made and fuel further debate. Further-

more, the process followed here, and its critical assessment, have relevance for the implementation of other new policies and legislation aimed at introducing fair and wise governance in a democratic South Africa.

Connecting initiatives in the coastal zone — Links could also be established with other policy processes, including the White Paper on Sustainable Coastal Development in South Africa (Anon. 2000) and the National Environmental Management Act (Anon. 1998b). Given that subsistence fishers are by definition "the poorest of the poor", typically have been marginalized historically and often living in underdeveloped areas, they will in many cases be the targets of coastal poverty-alleviation and development initiatives. Development of local management structures for subsistence fisheries in coastal communities will provide communication channels and structures with which government and non-government organizations can engage, and the establishment of multi-purpose coastal forums could be considered. Furthermore, some existing subsistence fisheries projects (e.g. Harris *et al.* in press) have made use of reciprocal visits between fisher communities, with encouraging results in terms of broadening the perspective of fishers, reducing isolation of communities, and improving awareness of management options. The multi-tiered approach to fisheries management recommended by the SFTG, with national coordination and regional and local implementation structures, will open opportunities for cross-fertilization of ideas and solutions across regions and between communities.

Constraints

Timescales — The most significant constraint was that the timescale set for the process was determined primarily by a political agenda rather than by a rational planning process. This is understandable given the desire to deliver rights to disadvantaged communities, but was not matched with sufficient capacity to affect this. In one sense the tight deadline was positive in that it drove proceedings at a fierce pace; in another sense it was negative because it prevented in-depth attention to all aspects. The tight time restriction influenced many aspects of the process and was the underlying reason for many criticisms because it reduced consultation with fishers and created operational stresses. Ironically, it became apparent midway through the process that, although the fishers were anxious to have their problems attended to, they were more concerned about being consulted about decisions that would affect them than in the government rushing the process of implementing management systems. However, this attitude did vary among the fishers and may have been related to the level of current access enjoyed by different fisher groups, and whether it was legal or illicit.

Consultation — A second limitation on the process was that the consultation with fishers was imperfect. Deliberate and planned steps were taken to consult widely, in the firm belief that participation was essential to success (as advocated by many, including Pinkerton 1989, Berkes *et al.* 1991, 2001, Berkes 1994, Pomeroy and Berkes 1997). Consultation with fishers was largely through the Regional Fieldworkers, at the "roadshow" meetings and, to a lesser extent, at the national workshop. Despite this, there were inadequacies, mainly attributable to time and budget limitations. Consultation was also significantly affected by the lack of established communication networks in many areas, and this seriously impeded research and communication with fishers. Partly as a result of this, there was a high level of initial mistrust by fishers, particularly of authorities: in some instances fishers displayed overt antagonism to them.

Composition of the SFTG — All non-MCM participants on the SFTG core and consultative groups were invited to participate by the Chief Director of MCM and operated on a voluntary, unpaid basis. This had advantages and disadvantages. It did mean that the SFTG was seen as independent of the managing authority, and that established experts from a wide variety of disciplines could be used to advise the authority. However, it also meant that huge strains were imposed on all participants, who were holding down fulltime positions elsewhere (and other responsibilities at MCM) while they were driving the process. The workload was such that that there should have been salaried staff dedicated to steering and implementing the process. The multidisciplinary nature of the SFTG was an important feature because it meant that the full spectrum of economic, social, managerial and ecological issues could be explored effectively. The SFTG core team was, however, criticized for insufficiently representing South African society and being biased in favour of the natural science community, although deliberate efforts had been made to ensure the team was fully representative.

Capacity of MCM — The capacity of the responsible management agency to manage and participate in the process was limited. MCM members of the SFTG contributed vitally to the process. Individuals contributed as best they could under trying circumstances, but necessary levels of involvement, communication and buy-in were not achieved, and some

pre-emptive decisions by MCM sometimes contradicted SFTG recommendations and undermined the process. In part, these problems were due to shortages of staff and other pressing priorities such as allocations for commercial fisheries, coupled with political pressure to produce results fast. These problems were exacerbated by upheavals at MCM as a result of its organizational and administrative restructuring by the Department of Environmental Affairs and Tourism, and a seeming lack of support during this time from the Pretoria-based headquarters of the Department for MCM in Cape Town. This resulted in poor staff morale at MCM and resignations of key staff that further reduced capacity. At the same time, inadequate staffing and funding of most regional and local agencies prevented them from fully engaging in the process. Although the funding allocated to the process was limiting, a more serious constraint was the delayed acquisition of funds, which resulted from centralizing the financial system at the national headquarters of the Department in Pretoria. This meant that allocated funding could not easily and timeously be released for urgently needed tasks, including vital appointments within MCM and the disbursement of funds for contractually commissioned research. This problem with disbursement of allocated government funds persisted into the implementation phase, and remains a major stumbling block.

The new fishing policy that underpins the MLRA requires a re-orientation of approach from traditional resource dynamics to one that focuses more on people and development issues; it recognizes that a large component of fisheries management is about managing harvesters (Caddy 1999). Because the past approach of MCM was resource-oriented, people-oriented skills and experience among the staff were under-developed and scarce, and an understanding of the special needs of subsistence fishers was weak. Appropriate communication skills and mechanisms were also generally lacking.

A central concern was the delay between the submission of the recommendations by the SFTG and their implementation by MCM. At the time that the recommendations were submitted, MCM was being reorganized structurally, and was immersed in the implementation of many other aspects of the MLRA. Legal challenges to their decisions were frequent and time-consuming. The failure to appoint a Subsistence Fisheries Advisory Committee to replace the SFTG and maintain broad consultation during implementation has hampered progress and is compromising continuity.

Availability of information — As already stated, remarkably little has been published dealing specifically with the development of policies on subsistence fisheries. Further, very little was known about the informal fishers in South Africa because they had been largely marginalized and ignored. For many of the species harvested by subsistence fishers, there is still a paucity of scientific literature on the population parameters necessary to assess the levels at which harvesting will be sustainable, or the impacts of methods used by subsistence fishers. This made it difficult to advance specific recommendations on regulations for harvesting. Until better information becomes available, allocations will have to be guided by the precautionary principle. Compounding this problem, most resources are already fully utilized by commercial and recreational fishers (Branch *et al.* 1996, van der Elst *et al.* 1997). Therefore, re-allocation among sectors will be the only way to accommodate subsistence fisheries and small-scale commercial fisheries.

Lessons learnt

Timeframes — The brevity of the time span imposed on the entire process was a stricture. The lesson here is that a properly planned schedule, including time and financial budgets, should have been prepared in advance and its realism evaluated before the initiation of the process. In particular, given the lack of prior management and communication systems, extra time and resources should have been allocated to communicating with fishers. In hindsight, it would have been preferable to assess the perceptions and needs of fishers prior to setting time-scales, rather than rushing the process as a consequence of political pressures based on a limited understanding of subsistence fishers' needs.

Communication — The absence of easy means of communication with and among fishing communities slowed the process significantly. Suitable means of communication must be used to reach subsistence-fishing communities, many of which are isolated and rural. Languages are diverse; illiteracy is high in certain areas, and poverty limits access to media such as television. The vital role of "on-the-ground" Regional Fieldworkers became obvious, and first-hand contact with fishers and local managers proved essential. Consultation with fishers was largely through them and, in a more limited way, at the "roadshow" meetings and the national workshop. Carefully planned presentations at public meetings held in the local language or aided by translators, and complemented by easily understood pamphlets distributed via local leaders, were all successful elements that elicited enormous interest and active participation. Fishers were particularly eager to be addressed by senior members of the managing

authority, MCM.

Inevitably, political agendas surfaced in various communication forums and throughout the process. It was therefore important to seek the views of the fishers and users themselves and not to rely solely on input from so-called representative structures. There were very different views, needs and perceptions among the range of stakeholders, managers, scientists, community monitors and fishers. All information from these disparate sources (and in particular those of the fishers) had to be articulated, weighed and incorporated into the recommendations if they were to be accepted by all parties.

Composition of the SFTG — Execution of a nationwide programme was challenging in terms of the organization and coordination of activities. The appointment of a fulltime National Coordinator to undertake this function was essential, particularly because all SFTG members were employed full time in other capacities. Furthermore, the Regional Fieldworkers were an indispensable element of implementing the field programme and creating an effective interface with the fishers. There were huge benefits to the multidisciplinary nature of the SFTG, which compelled a holistic view of how subsistence fisheries should be defined and managed. From its inception, the SFTG included representatives of user-groups, researchers with a spectrum of expertise, and managers. This stands in strong contrast to the composition of the Fisheries Policy Development Committee, which deliberately excluded fisheries managers and scientists (Cochrane and Payne 1998, Martin and Nielsen 1998). Expanding the SFTG to include more MCM managers who were likely to be charged with implementation would have strengthened the group and smoothed transition between recommendation and implementation, although it is acknowledged that the presence of other priorities precluded this. A clear agreement on the processes to be followed and the role of the national management agency staff in these should also have been reached at the outset. Inclusiveness that allows representation of all regions, all interested sectors and all relevant spheres of expertise is a fundamental principle that should influence the composition of policy-forming groups right from the start of the process, to avoid the "no voice, no ears, no acceptance" syndrome.

Providing sufficient capacity — Personnel need to be properly trained and dedicated full time to the implementation of the subsistence fishery. At the very least this must involve senior administrators responsible for overseeing the process, scientists for monitoring and analysing the results, and Regional Fieldworkers who can interface directly between the fishers and managers. Financial arrangements have to be in the hands of authorities that are both responsible and knowledgeable about needs, not distanced from the working of the operation. Long-term financial planning is required with regard to personnel appointments, equipment and disbursement to partner agencies or institutions. It was crucial that the SFTG spent time on preparation of fund applications as the funds that were obtained in this way oiled the system for speedier completion of the recommendations and their implementation.

Evaluation — It is important to build evaluation mechanisms into the process so that progress can be assessed at intervals and approaches altered timeously when necessary. This was lacking in the process followed by the SFTG, but was substituted by a few opportune activities, e.g. the national workshop and Consultative Group feedback. Publication in peer-reviewed literature not only formally documents information and contributes to the debate, but also allows evaluation.

Ensuring resource sustainability — An assessment of all potential resources needs to be done, to (1) classify their suitability for use by different sectors; (2) take decisions about the proportions of each resource that should be reserved for particular sectors, and (3) decide whether areas should be zoned to allow preferential use by particular sectors. Comments about the suitability of resources for subsistence and small-scale commercial use appear in Cockcroft *et al.* (2002), but the issue of relative allocations remains a prerequisite task for the implementation phase.

CONCLUSION

In summary, the process set in motion with the appointment of the SFTG created remarkable opportunities not only to rectify the previous marginalization of subsistence fishers, but also to revolutionize thinking about the types of management approaches that are most effective in managing fisheries in general. The recommendations produced (see Harris *et al.* 2002) blend the needs of the fishers, sound resource-use principles provided by the scientific community, and practical management requirements. There is no doubt that implementation of appropriate management systems for subsistence fisheries is complex, requiring multi-disciplinary, inter-institutional and consultative people-oriented approaches. Following submission of the recommendations, implementation has been disappointingly slow, and the reasons for the delays are among the lessons that should influence the way

in which such processes are approached in the future. A major challenge lies ahead in addressing the problems and constraints that were identified. While conducted in the context of the current South African political and environmental situation, the process followed, and recommendations that resulted, provide important information applicable to management of subsistence and artisanal fisheries in general.

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