

REPORT OF MEETING

**SPC/WPRFMC/FAO Workshop
on Fisheries Legislation and Community-based Fisheries Management**

(Honolulu, Hawaii, United States of America, 4–8 April 2005)



**SECRETARIAT OF THE PACIFIC COMMUNITY (SPC)
NOUMEA, NEW CALEDONIA**



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2005**

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Executive Summary

This regional workshop on fisheries legislation and community-based fisheries management was organized by the Secretariat of the Pacific Community (SPC) and the Western Pacific Regional Fisheries Management Council (WPRFMC). The workshop was funded by SPC, WPRFMC, the Food & Agriculture Organization of the United Nations (FAO), the Commonwealth Secretariat, Australia, New Zealand and France, and hosted by WPRFMC in Honolulu from the 4th to the 8th April, 2005.

The workshop was conducted primarily in response to the needs of Pacific island countries; these needs were detailed in the SPC document "*Strategic plan for fisheries management and sustainable coastal fisheries in Pacific islands*," which was endorsed at the SPC Heads of Fisheries meeting held in Noumea in August, 2003. The workshop was also able to serve the purpose of meeting the objective of the FAO Project TCP/RAS/2907 to convene a workshop at a regional level.

The workshop was well attended with 64 presenters and participants. Country representatives were mostly senior fisheries officers and over 25% of the participants were women.

The workshop was conducted on a participatory basis to cover key areas in fisheries management, community involvement, and the implementation and enforcement of fisheries regulations. Related topics included marine protected areas, ecosystem based fisheries management, community by-laws, and alternative sources of seafood. Participant exercises in analysing fisheries data, advising on community fisheries regulations, and developing fisheries legislation played an important role in the workshop.

A formal (questionnaire) assessment of the workshop by participants suggested that that the workshop topics were well chosen. All subjects received an approval rating close to 90%. The most useful subjects (by a small margin) involved fisheries regulations and fisheries management plans. The least useful subject was on the structure of fisheries agencies (but even this scored over 85% approval). From the written comments of participants, the need for more training in fisheries management (including the preparation of management plans) and the need for the involvement of legal advisers in all workshops were the ones most commonly expressed.

Participants were most emphatic that the group activities and role-playing provided a significant learning experience in managing community fisheries and implementing fisheries regulations. Experienced presenters at the workshop claimed that the level of participation in group activities and discussions was high and most rewarding.

Most participants believed that the two field trips (to an early morning fish auction at pier 38 and to a traditional aquaculture site) were of great value, and provided a relief from the demanding workshop sessions. Participants also expressed appreciation for the roles of SPC, WPRFMC, FAO and ComSec in sponsoring the workshop; they believed that the cooperation of these organizations should result in further targeted workshops. Participants gave high praise to the workshop organizer, Ueta Fa'asili, and the WPRFMC hosts, Kitty Simons and Charles Ka'ai'ai.

The following four formal recommendations were made by country representatives at the workshop.

- 1) Under the agenda item 4 (the analysis of catch and effort data) participants **recommended that the training on the use of the SPC socio-economic manual be conducted at the earliest opportunity.** Training in the use of the manual was discussed at the Nadi workshop on "Fisheries Management and Statistics".

- 2) Under agenda item 7 (Fisheries management plans) country participants **recommended that training to enable countries to develop their own fisheries management plans should be conducted as soon as possible.** Goal 1c of the regional plan refers to short courses on the preparation of fisheries management plans.
- 3) The management of “live food fish” fisheries was discussed as a major problem in some countries. The destructive nature of fishing on spawning aggregations was a concern to many. **It was recommended that a regional approach be taken in resolving the problems faced by countries in the management of their live food fish industries.**
- 4) Due to the differences in cultures, customs and traditions in countries of Micronesia, Melanesia and Polynesia, **it was recommended that workshops should be subregional in order to resolve difficulties encountered in the development of community-based fisheries management.**

In addition to the formal recommendations given above, the interest and concerns of participants suggest that there is a need to hold a “fisheries and the marine environment” workshop for two senior representatives from each country; one from an environmental agency and one from a fisheries agency. This is needed to address the lack of cooperation between such agencies and to allow fisheries managers to address ecosystems-based fisheries management and the development of marine protected areas. Such a workshop was one of the activities recommended in the SPC strategic plan.

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A. Background to the workshop

The workshop was conducted primarily in response to the request from regional fisheries agencies for assistance and training in fisheries management, particularly in relation to fisheries regulations and community-based fisheries management. These needs are recorded in the *“Strategic plan for fisheries management and sustainable coastal fisheries in Pacific island,”* which was produced by the Secretariat of the South Pacific (SPC) following a regional workshop and in-country visits. The plan was endorsed at the Heads of Fisheries meeting held in Noumea in August, 2003.

The workshop relates to needs listed under goals 3 and 4 of the strategic plan; namely *“to assist countries to review, update and/or develop practical and enforceable fisheries regulations”* and *“to assist countries to involve fishers and other stakeholders in fisheries management and to assist with the development of property-use rights.”*

The workshop also served the purpose of meeting the objective of the FAO Project TCP/RAS/2907 to convene a workshop at a regional level.

The workshop was funded by the Secretariat of the Pacific Community (SPC), the Western Pacific Regional Fisheries Management Council (WPRFMC), the Food & Agriculture Organization of the United Nations (FAO), and the Commonwealth Secretariat (ComSec). The workshop was organized by SPC and hosted by WPRFMC in Honolulu from the 4th to the 8th April, 2005.

B. Opening addresses

Summary of address by Masanami Izumi, Fishery Officer, FAO/SAPA (given on behalf of Dr Vili Fuavao, FAO Sub-Regional Representative for the Pacific.)

Mr. Izumi delivered a statement on behalf of the FAO Sub-Regional Representative for the Pacific. In mentioning the past joint regional workshops on fisheries management and this workshop organized by four organizations, he expressed the importance of regional cooperation and collaboration. He highlighted the FAO Code of Conduct for Responsible Fisheries and its 10th anniversary with emphasis on developing and strengthening institutional and legal frameworks at national level. He briefed the meeting on the on-going FAO sub-regional project on coastal fisheries legislation for the Micronesian countries under the technical cooperation programme. FAO will continue to support the countries by providing its technical assistance.

Summary of address by Semisi Fakahau, Commonwealth Secretariat.

Mr Semisi Fakahau thanked WPRMC, SPC and FAO for their work in bringing the meeting together. He said that it was a good example of donor programmes working together on a project. He said that he was happy to support the implementation of the strategic plan that the Commonwealth Secretariat had helped develop. The tsunami in Asia reminded us all of the vulnerability of coastal resources and the coastal populations that depend on them. He said that the participants at this meeting are removed from communities and the hope is that whatever we deliberate on and discuss are points that will be practical and relevant to the people living in the communities.

Address by Ms Kitty Simonds, Executive Director, WPRFMC

My brothers and sisters, *aloha kakahiaka* and welcome to this gathering of Pacific Islanders representing the countries and territories of the Secretariat of the Pacific Community (SPC), the Pacific countries of the UN Food and Agriculture Organization (FAO), and the territories and commonwealth of the United States.

We are pleased to co-host this workshop on fisheries legislation and community-based fisheries management with the SPC and FAO here in Honolulu. As islanders we share histories, cultural values and traditions and our dependence on the sea. We now have another general opportunity to sit together and exchange information about our respective fisheries issues and to resolve problems that persist and hinder management of our resources. Some of the questions we have to answer here are

- How do we keep good staff?
- How do we collect and analyze information with inadequate funding?
- How do we develop management regimes with regulations that are practical and enforceable?
- What are the useful and necessary legal instruments to assist us in these daunting tasks?

All of us here operate under different management regimes, different political structures, but the tools are the same, the commitment to preserve the communities' rights and access to the fisheries are the same, and the commitment to conserve the resource and protect the environment is the same.

In the US Pacific, sustainable fisheries is our mandate under the Magnuson-Stevens Fishery Conservation and Management Act. The Council process for managing fisheries is an open, transparent process that involves the public and stakeholder in the development of management recommendations. We have many committees that work on developing our fishery management rules and regulations.

One of the biggest challenges facing all of us is the ecosystem approach to fisheries management. We are moving toward archipelagic ecosystem plans for Hawaii, the Marianas and Samoa. You will hear more about our plans during the week.

We hope that this workshop will be just one of the many future collaborations and cooperative efforts to continue to bind the Pacific community into the family that it truly is.

Imua I ka lanakila (Move forward to triumph, prevail).

C. Summaries of workshop sessions and discussions

Session 1

Introduction to the workshop

Ueta Fa'asili, workshop coordinator

The workshop coordinator, Mr Ueta Fa'asili, gave a brief introduction of the workshop. He said that the workshop on Fisheries Legislation and Community-based Fisheries Management (CBFM) is one of the many training needs documented in the "*Strategic plan for fisheries management and sustainable coastal fisheries in Pacific islands,*" which is now often referred to as the "*Regional plan for coastal fisheries management*".

The regional plan was developed by all the countries under the umbrella of SPC as a result of two activities.

- 1) The SPC Regional Policy Meeting on Coastal Fisheries Management (held in March 2003 in Nadi) – Mr Fa'asili said some of the country participants present at the workshop were also participants at the Nadi regional policy meeting that developed the regional plan.
- 2) A field study to certain countries of the Pacific – these visits were undertaken immediately after the Policy meeting in order to determine the ability of countries to implement actions required to manage their coastal fisheries.

The recommendations and findings from the policy meeting and the field study were incorporated into the regional plan for coastal fisheries management. This strategic plan was endorsed at the Heads of Fisheries meeting in Noumea in 2003. Included in the plan are a number of needs required by the countries, either in form of direct country assistance or through regional training sessions and workshops. This present workshop on "*Fisheries Legislation and Community-based fisheries management*" is the second workshop conducted under the plan. The first one was held in Nadi, Fiji in November 2004 on Fisheries Management and Statistics.

The purpose of this workshop is to provide an opportunity for countries that have on-going CBFM programmes to exchange experiences and ideas and to learn from each other from their respective developments. And for the countries that have yet to develop CBFM programmes, it provides an avenue to observe the results of involving communities in the management of inshore fisheries resources; it prepares them for convincing ministers and other authorities on the value of CBFM.

One important aspect of the workshop is that it provides an opportunity to see how legislation, particularly the use of fisheries regulations and community fisheries bylaws, is a tool that can be used by local communities and other stakeholders in the management of coastal fisheries. Mr Fa'asili was confident that the level of expertise involved in the workshop (with the presence of lawyers, community specialists and scientists) would provide ample assistance to country participants during the course of this workshop.

Mr Fa'asili advised the participants that the workshop was designed to allow more time for discussion and practical exercises. The goal is to run the workshop in as informal manner as possible in order to encourage participants to speak up more freely during discussions.

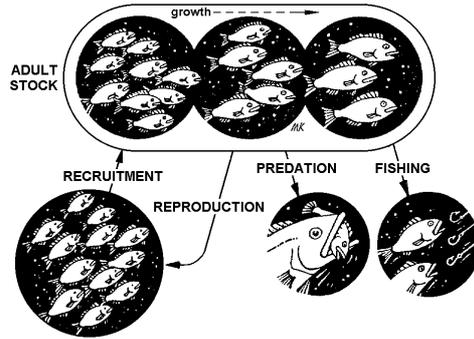
Mr Fa'asili said that the workshop was organised after consultations between the WPRFMC, FAO and SPC. The Commonwealth Secretariat was working behind the scenes in providing funds to SPC to implement many activities, including this workshop. Mr Fa'asili thanked all regional organisations concerned, including the Commonwealth Secretariat, for their contributions to the workshop.

Session 2

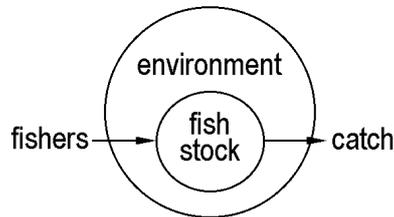
Fisheries management in Pacific island countries

Michael King

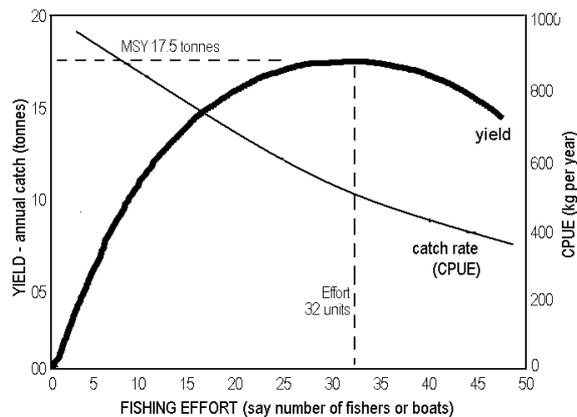
From a limited biological view a fishery can be depicted as a system in which a population or stock of fish, and the forces acting on it and controlling its numbers, are shown.



The number of fish in the stock is being increased by the reproduction of adult fish, which eventually results in small fish being added, or recruited, into the stock. The fish stock is being reduced in numbers and biomass by predation and, in exploited species, by being caught by fishers. However, a broader and preferable view of a fishery is one that is more inclusive, consisting of the fish stock, its environment, the fishers and their catch.



A fishery is overexploited if more fish are taken than can be replaced by reproduction. From a statistical viewpoint, this occurs when the fishing effort is higher than that required to secure the maximum sustainable yield.



Overexploitation has been listed by 78% of all countries as the cause of reduced catches. However, the real cause is not clear! What does “overexploitation” mean? That fishing effort is too high? That fishing is too effective, or destructive? Or that the marine environment has been affected? In order to manage fisheries, we have to be more aware of the causes of declining catch rates, and not simply label “overexploitation” as the cause. Concern about “overexploitation” has resulted in a change in the aim of fisheries management from “development” to “sustainability” in most fisheries agencies.

Problems with coastal fisheries, identified by respondents to a questionnaire survey recently conducted by SPC, are listed below in a tentative decreasing order of importance (based on the number of countries nominating the problem as important in the questionnaires).

Overexploitation – decreasing catch rates - reasons unspecified	(78%)
Inadequate or outdated fisheries regulations and/or inadequate enforcement	(50%)
Lack of capacity in the country – eg in stock assessment, data collection	(50%)
Overly efficient fishing methods – eg night diving, small mesh nets, SCUBA	(40%)
Destructive fishing methods – eg explosives	(25%)
Illegal fishing by foreign vessels	(15%)
Shift from subsistence to commercial fishing	(15%)

In addition to the above, respondents noted problems associated with the pollution or degradation of wetlands and coastal zones. Of these, siltation, eutrophication and uncontrolled or excessive coastal development were prominent

Other than increases in population sizes (particularly in urban areas) the most obvious reasons for the decline of inshore fish stocks are the use of overly efficient and destructive fishing methods and environmental disturbances. The use of modern materials such as chicken-wire for fence traps and monofilament nylon for gill nets, for example, has made fishing effort more effective. In some cases, quite modest developments such as the availability of underwater torches, which allow the spearing of fish resting under corals at night, have resulted in a dramatic increase in fishing efficiency.

In some countries, the use of explosives and poisons to disable and capture fish represents a serious threat to marine ecosystems and the long-term viability of fisheries. These destructive fishing methods include the use of toxic plants, commercially available poisons such as bleaches (sodium hypochlorite), insecticides, and explosives. Poisonous plant material may be derived from the roots of the climbing vine, *Derris elliptica*, and the nut of the coastal tree, *Barringtonia asiatica*. The collateral damage associated with the use of poisons and explosives is that smaller animals, including larvae and coral polyps, are more easily killed than the target species. Destroyed coral reefs result in low fish production, and may not recover for over 20 years.

Not all destructive fishing methods are modern in origin. Traditional fish drives and some collecting activities may involve damage to corals, either directly as a result of breaking coral to catch sheltering fish, or indirectly through the impact of many people moving over the reef. In the past the marine environment was more likely to be able to sustain such damage because the frequency of the activity was low and fewer people were involved.

Environmental disturbances have resulted from not only natural events but from human activities. These activities include the destruction of nursery areas (including mangrove areas) by road construction and land reclamation. Corals are collected for sale as souvenirs and coral blocks are used for building. Harbour dredging, coastal development and poor land management practices have resulted in erosion and the siltation of lagoons. Environmental disturbances and habitat destruction have been linked to increasing incidences of ciguatera fish poisoning and outbreaks of crown-of-thorns starfish.

In most, if not all, Pacific Island countries, the total weight of seafood caught in subsistence, or village, fisheries is greater than that from commercial fisheries. And, when a nominal value per kilogram is put on the subsistence catch, it is often found to be of greater value than commercial catches. This is particularly so if one considers the net profits from commercial fisheries, many of which rely on imported boats, equipment, and even bait. Subsistence fisheries also provide health benefits and cost savings beyond their intrinsic value. Locally caught and consumed seafood decreases a country's reliance on cheap and low quality protein imported from overseas; sheep ribs from New Zealand, turkey tails from the United States of America, and canned fish from Japan are ubiquitous food items in island countries. Decreases in local seafood consumption are also contributing to the high incidence of heart disease and diabetes in Pacific Islands. Hence increasing seafood consumption, or restoring it to previous levels, will have benefits in reducing the cost of health care as well as in foreign exchange savings.

In spite of the obvious importance of subsistence fisheries to local populations, most government fisheries agencies devote the majority of their financial and human resources to assessing, developing and managing commercial fisheries. In addition, there is a preoccupation with managing fish stocks when in fact management should be directed at the actions of people. The actions of people are the causes of both overfishing and environmental degradation. Managing fisheries means managing people rather than the exploited stock, and managers have limited options:

- _control type and/or amount of fishing
- _restrict the amount of fish caught
- _protect or restore fish habitats

With over a quarter of all the world's fisheries over-exploited, fisheries managers appear to have done a poor job. Without being defensive about this, there are many possible reasons –

- _Pressure from fishers (the need for fishers and communities to maintain catches)
- _Political interference (the push by politicians to develop fisheries)
- _Limited expertise (fisheries staff are usually biologists whereas inputs are also required from economists, sociologists, ecologists and legal professionals)
- _Inability to deal with environmental threats
(environmental threats are often under the control of separate agencies)
- _Inability to enforce regulations (centralized control; large coastlines, many fishers)
- _Lack of involvement of stakeholders (lack of consultation and co-management)

Discussion

PNG asked why it was not seen as important to include other stakeholders in fisheries management in the past. Discussions centred on the mindset at the time that governments and their agencies were required to make decisions without the need for consultation with the public.

Palau suggested that the government's emphasis on commercial fisheries could be because of state jurisdiction. The community's jurisdiction is within the inshore areas and thus there is less commitment to work in coastal areas by the government.

PNG said that it had so many provinces and not many people involved in the management of subsistence fisheries. Beche-de-mer, for example, are managed at the national level. Managing a resource with so few people is difficult and we need to have more community involvement.

Session 2: The incidental take of sea turtles

Irene Kinan



(power point presentation – no written summary)

Discussion

Discussions were about the concern regarding the depletion of protected species including sea turtles. On longlines, some turtles take baited hooks, some become entangled, and some are hooked externally. Gear restrictions were discussed including the use of specially designed circle hooks. The US may require that all countries selling fish to the US use mitigation measures

Palau asked what the Japanese were doing about mitigation measures. Irene Kinan said that the US is trying to work with the Japanese on this, but they target tuna not swordfish. There will be a workshop for Australian, Indonesian, Malaysian, Philippine, Mexican and Spanish agencies interested in mitigation experiments to reduce bycatch.

Tonga pointed out that, although the special hooks are expensive, they should become cheaper if all fishers needed them. PNG asked about using observers to study the bycatch of turtles. There is a need to train observers appropriately to be able to take into account mitigation factors.

Steve Why noted that there is a close relationship between turtles and community-based work given the traditional importance of turtles in the Pacific. Legislation often does not take into account the lack of understanding of the importance of some of these marine species to different countries.

Blaise Kuemlangan commented that turtle meat as a food source for many PICs was an issue that needed to be considered in conservation, management and regulatory initiatives. The importance of traditions associated with turtle for consumption is recognised by the fisheries legislation of certain countries which adds impetus to the need to consider these factors in addition to the scientific information for purposes of regulation.

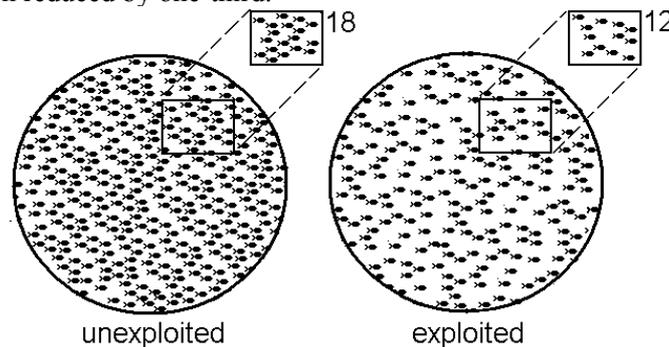
Session 3

Information requirements in fisheries management (the analysis of catch and effort data)

Michael King

The conventional and basic indicators of the “health” of a fishery are the mean size of fish in the catch, and catch rates. Catch rates, or catch per unit effort (CPUE), are calculated by dividing the catch by the fishing effort (time or gear used per unit time). Examples of units for CPUE are kg per hour fished, kg per trap, and kg per 100 hooks.

The basis of using CPUE is that it is believed to be an index of stock abundance. In the following figure, a reduction in CPUE from 18 fish per hour to 12 fish per hour suggests that the original stock size (to the left) has been reduced by one-third.



Low and decreasing catch rates, as well as small sizes of fish in the catch, may suggest that either ...
 _ Sustainable yield has been exceeded, or,
 _ Fish habitats have been degraded.

The former means that the reproductive capacity of the stock has decreased; the latter means that the carrying capacity of the environment has decreased. Unfortunately catch and effort data do not usually allow us to identify the causes of decreasing stock sizes. More detailed information is required for this.

As most of us are dealing with multi-species fisheries, obtaining catch and effort data is particularly difficult. Fishing effort data in particular is hard to get. So, will other indicators of stock numbers suffice? In community fisheries, for example, we could we ask fishers ...

“How long did it take to catch this string of fish?”

“How long did it take you to catch a string of fish 5 years ago?”

“Are the fish in the catch smaller than before?”

These are the methods that we should think about at this workshop. An exercise in the analysis of catch and effort data is included in this workshop (Session 4).

Session 3: Data collection – Hawaiian style

Josh Demello



(PowerPoint presentation – no written summary available)

Discussion

Josh Demello discussed the need to have systems in place to record catch and effort data and the need to have different data collection methods for the various areas. He said that there were also pilot projects based on the collection of some voluntary data.

A question from a Hawaiian participant was why licenses were not introduced for inshore fisheries to fill some of the gaps in the data. Josh Demello said that these were considered but local people are opposed to it, given that they have already been fishing inshore for generations. They are opposed to a system where they are formally required to get a license to do what they had always done. When asked about inshore fishing, Josh Demello said that only commercial catches are monitored.

Steve Beverly (SPC) suggested that Saipan could enlighten people on the system used on artisanal fisheries. A voluntary logbook system (whenever fishers sell fish they fill in the log book) is in place. In Hawaii, however, you require a commercial selling license to sell fish. So with voluntary reporting there is at least a check of those with licenses and selling. Some fish is sold and imported illegally.

Samoa (Anama) said that they are conducting a subsistence fisheries survey every three years. For the tuna long line fishery, log books are used.

Martin Tsamenyi said that people need to really take data collection and analysis seriously as this is the basis for a starting point in fisheries management. To convince politicians and those in management positions, there is a need to have reliable and accurate data. Mike King said that, in the case of subsistence fishing, data is difficult to get and management decisions may have to be made on anecdotal information – say on information about falling catch rates from the community.

Samoa said that PROCFISH were supposed to be training people on the use of the data collection manual and asked about progress. Ueta Fa'asili said that he would raise this with the appropriate section at SPC.

Palau said that there was a need to strengthen regulations before management and enforcement work could be carried out.

PNG said that they have commercial log book data and other forms of data monitoring and collection, eg buyer's license, and this is entered into a database. Recording of the numbers of fishers, boats, etc is a difficult task because of the size of the country. It is not easy to collect this type of information.

Steve Why said that the workshop should get into the management topics then come back to why we need data for management. It is important to know what the decision making process is, and where this data can be used.

Martin Tsamenyi discussed evidence-based decision making, in which politicians need data to make decisions. And this goes back to fisheries management. Data collection is always "too hard" but data are very important in making management decisions. Managers especially have to tackle the question on data and not always put it in the "too hard basket".

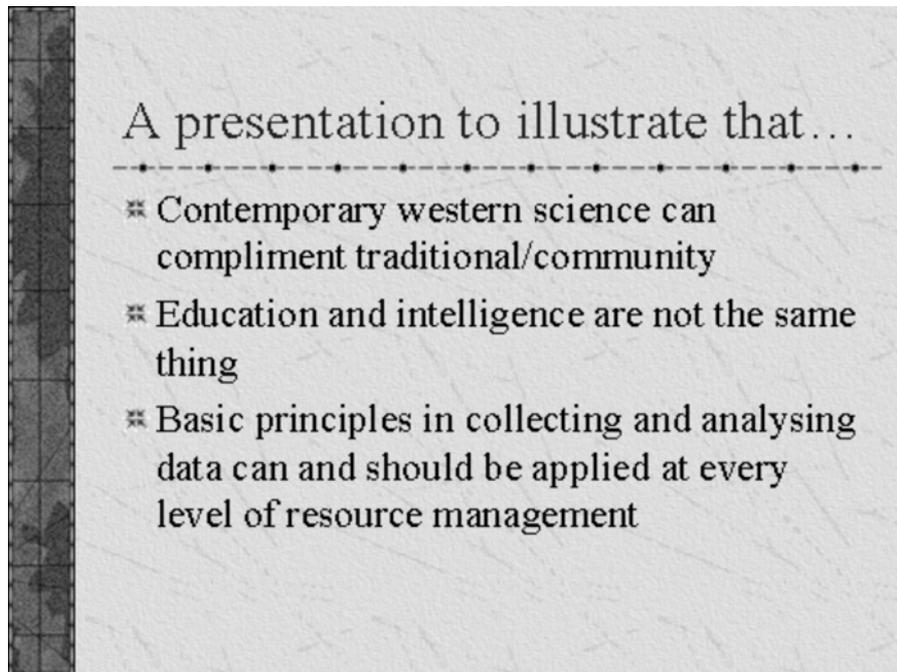
However, Mike King said that, in the case of community fisheries, urgent management actions are required. Fishing communities know there are urgent problems with depleted stocks and we have not got the time or the resources to gather data to verify what they are saying. The need to act is urgent in many cases. The point about CBFM is that the community takes actions based on what it knows, not on what scientists need to verify.

The Solomon Islands said that data collection is very difficult especially in setting up collection systems - most systems are set up for commercial fisheries. Finance is very difficult and thus collecting data from subsistence fisheries is very difficult. The question is how to address these issues within our own localities. It is always difficult for the government to work in areas that are traditionally owned. This can be facilitated through the process of community-based management, which is the challenge in this case.

Samoa mentioned the problem faced when they set up market surveys and people started using other avenues for selling their fish.

Session 3: Community based data collection

Tony Beeching



(PowerPoint presentation – no written summary available)

Discussion

Tony Beeching gave a PowerPoint presentation and made the following key points.

- Western knowledge often complements traditional knowledge, rather than vice versa.
- Education is often confused with intelligence. Community members who may never have had an opportunity for formal education are capable of understanding complex issues.
- When considering the collection and analysis of data, similar principles can be taught and applied at any level. Whether at community, national or regional level, black-boxing of processes should be avoided. Analysed data should always be considered with an understanding of the resource and it's extraction, and never in isolation.
- In community activities, including the assessment of natural resources, all sectors of the community should be involved. Different sectors have different information to contribute, and if the entire community to own the project, not just one sector, there is a greater chance of success.
- Traditional knowledge is an invaluable data source when there have been no western studies for example in gaining an indications of fishing trends. In general, local communities know their current and historic resources better than outside observers.
- There should be constant feedback of information collected from the community, a] to verify that is correct and b] to engender within the community a sense of ownership of the data and the process. Full involvement of the community may also improve their understanding of the resource and the pressures upon it.
- Facilitators should spend as much time as possible with the community – it is not productive to visit for a few hours complete a task and then return to the comforts of home. Commitment is recognised and appreciated by the community. It also gives the facilitators an opportunity to observe community social interactions/tensions and to study the fishing habits of the community.

This is the ideal time to gather basic information e.g. correlation of local and scientific names for marine organisms.

- Community activities should be enjoyable – participation will be higher and community members will be more attentive if the project/program is not considered a chore.
- Communities can understand complex western concepts, and gather and interpret data – the only limitation is the imagination and creativity of the facilitator/researcher.
- Wherever possible training should be in the local language through native counterparts. Any foreign involvement will be much improved if field workers learn the local language.
- Note the difference between community based and community driven – community driven processes are more likely to succeed than so called bottom-up management imposed from the top.
- It is noted that communities do not feel tied to constraints imposed upon researchers – agencies often attach tight strings attached regarding funding and reporting schedules. Wherever possible, field workers should not impose those same unrealistic constraints on the community. There is a greater chance of success if the community moves at it's own pace, without feeling pressured.
- **KEY FOR SUCCESS – FLEXIBLE MANAGEMENT** the researcher should be adaptive, innovative and be prepared to discard any preconceptions. They have as much, or more, to learn from the community as the community has to learn from them.

Samoa asked about communities doing their own data collection and how the information was verified. Tony Beeching replied that verification programmes have to be run at intervals. Palau stressed the need to standardise data collection methods.

A question on how Samoa got the chiefs involved in their CBFM programme was answered by Samoa (Etuati Ropeti). The chiefs and the traditional system are still very strong, and this has a lot of influence in the villages. The protocol had to be observed and strictly followed. The work in Samoa was made very difficult because other agencies doing conservation work provided money to communities. It took a lot of patience before it worked.

American Samoa said that village leaders hold very important positions in government. It is necessary to go through other channels like taking them out to dinners, lunches, etc to be able to talk informally. Blaise Kuemlangan commented that it is very important to get the decision makers and ordinary people involved but the situation differs even in a single country. In the the Milne Bay province of PNG for example, there was an assumption that there was a chiefly system in all villages such as in the Trobriands,- but in fact all islands or villages in the same province do not have chiefs - many had clans who were represented by a leader – this illustrates the different situations and persons one has to deal with.

Fiji said that the government already has a marine tenure in place and fisheries works closely with NGOs. (the FLMMA network was started 15 years ago with all different departments, NGOs, institutions, etc involved).

Terry Keju said that community based work in the Marshalls falls under three acts which guide the work. Legal assistance that is available here can assist in verifying these areas of work.

Samoa pointed out that if the people are used to being given everything by the government then it will be challenging to try and implement projects in which communities have to take their own actions. Tokelau said that people are used to being assisted and rely heavily on the government. How do we change mentalities? Semisi Fakahau said that people are undergoing change in communities. He talked about the difference between a problem and a situation. In the case of a problem, you have to change it. In a situation, we have to work along with it. If we try to solve what has become a situation, we can actually make things worse. There is a need for sensitivity when dealing with communities.

Session 4

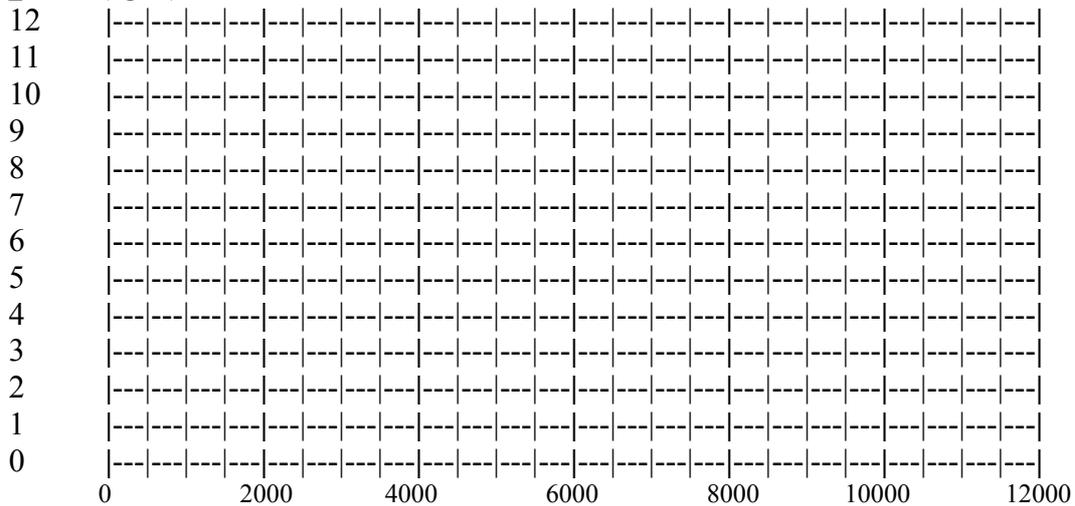
Community-based fisheries data analysis exercise

Michael King

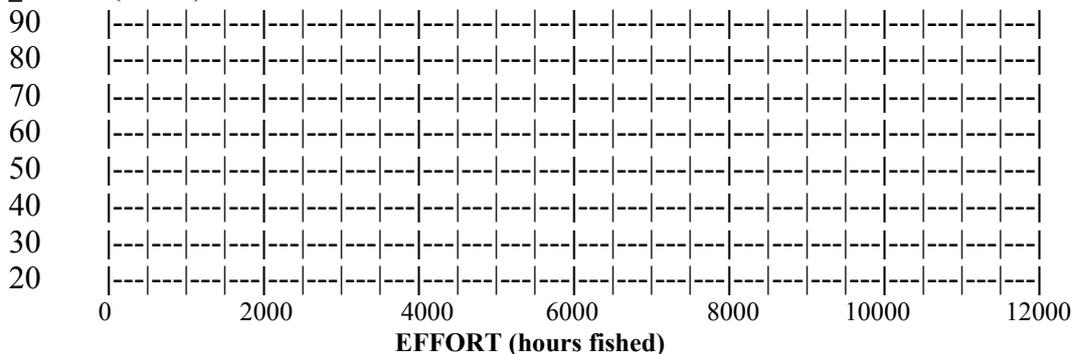
This exercise in basic catch and effort data analysis relates to a community-based fisheries management exercise to be done later in this workshop. Community fishers from three villages catch beche-de-mer in the adjacent lagoon. The villages supply catch and effort data to the fisheries agency which is advising them on community-based fisheries management. The data collected (from 3 villages combined) are shown below. Graph CPUE and yield on the two separate graphs below.

year	Number of fishers	Days fished per fisher	Hours fished per day	Yield (Catch in T per yr)	EFFORT (fishing hours)	CPUE (kg per hour)
1999	20	69	3.9	59.0		
2000	25	70	4.0	74.0		
2001	29	72	4.3	82.0		
2002	30	73	4.3	88.0		
2003	31	76	4.4	82.0		
2004	32	79	4.6	71.0		

CPUE (kg/hr)



YIELD (tonnes)



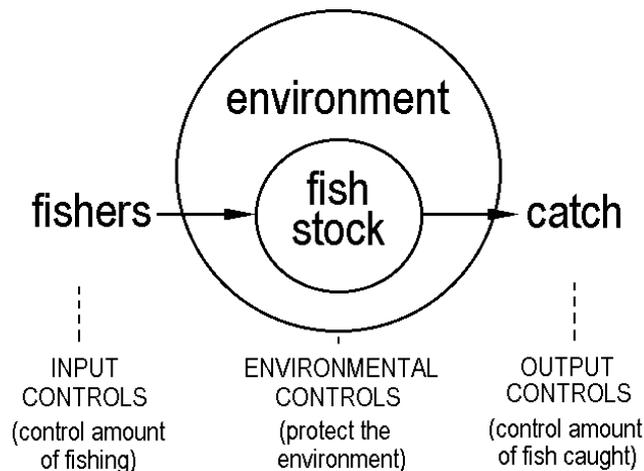
Session 5

Fisheries Management Tools

Michael King

Fisheries regulations are imposed on a fishery to support a strategy designed to achieve a predefined goal. If the goal is “to rebuild fish stocks,” for example, one particular strategy may be to “reduce fishing effort.” In practice, it is unlikely that any single management measure will produce the desired results, and a combination of several regulations may be needed.

National governments in Pacific islands have imposed a variety of conventional regulations that either restrict fishing (input controls), restrict the catch (output controls) or protect the marine environment.



The following sections describe some types of fisheries regulations and controls used in Pacific countries.

Limiting the number of fishers

Limiting the numbers of fishers is usually done by issuing a set number of fishing licenses. In the Cook Islands, for example, a set number of licenses is issued for people to collect trochus. In Samoa, a number of licenses is issued for fishers to participate in the tuna long-line fishery. Some village communities in Samoa have limited the number of fishers permitted to construct and use fence traps.

Limiting the efficiency and types of fishing gear

The use of some highly efficient fishing methods may be restricted in the interests of conserving fish stocks and allowing more people to use the resource. Limitations on gear types may include banning a specific fishing method in particular areas and on a particular species. For example, the use of gill nets may be prohibited in lagoons, and the use of SCUBA diving to catch lobsters may be banned.

Commercial gillnetting has been banned by communities in parts of Fiji and this is supported by the government. In Tuvalu, net fishing in the lagoons is also banned or strictly controlled by chiefs in some of the outer islands. In Samoa some communities have placed restrictions on the use of underwater torches for spear fishing at night. In some subsistence fisheries, the survival of the resource depends on inefficient exploitation!

Banning destructive fishing

Highly destructive methods of fishing, such as those involving the use of chemicals, bleaches or explosives are illegal, even though widely used, in many Pacific island countries. Some village communities have banned the use of traditional plant-based fish poisons (*Derris*) even though this is not banned under national law. In Samoa, some communities have banned the traditional smashing of coral to catch small sheltering fish. Local clans of Marovo lagoon in the Solomon Islands enforce prohibitions on the use of dynamite and plant poisons.

Closed areas and seasons

Closed areas can be used to protect fish stocks as well as the marine environment. Marine Protected Areas (MPAs) are the subject of a later presentation at this workshop.

Minimum mesh sizes.

Minimum mesh sizes in nets, and escape gaps in traps are applied in many fisheries to allow small individuals to escape and grow to a size at which they can reproduce at least once before capture. In many island countries, governments have imposed mesh size regulations, and rules set by local fishing communities can support and enforce these regulations. Some communities may set their own larger mesh sizes, to further reduce the catch of small fish.

Size limits (minimum legal lengths)

Limiting the size of individuals caught involves returning captured individuals smaller than a prescribed minimum size to the sea. Traditionally, size limits have been applied to allow individual fish to spawn at least once before capture. Minimum legal sizes are perhaps the most ubiquitous of fisheries regulations and have been applied by national governments in Pacific Islands to many species including sea cucumbers, trochus, pearl-oysters, giant clams, spiny lobsters, mangrove crabs and many species of fish.

Size limits are only useful in fisheries where individuals are not harmed by the catching method, such as molluscs gathered by hand, or crustaceans caught in traps. Although some shallow-water fish caught on hooks may survive well if returned to the water immediately, this type of regulation has little application to spear-caught and deepwater fish species. Fish caught in deep water are unlikely to survive after being hauled to the surface and released. Some village communities in Samoa have set their own minimum size limits, which are larger than those set under national regulations.

Rejection of females, or spawning females

Regulations making it illegal to retain females, or females bearing eggs, can only be applied sensibly to species in which the sexes can be distinguished easily and where the catching method does not harm the individuals caught. Regulations making it illegal to retain egg-bearing, or "berried", lobsters and crabs are commonly used in Pacific Islands. The regulation is useful in cases where lobsters and crabs are caught in traps, and females bearing eggs can be returned to the sea. However, in cases where these crustaceans are caught by spearing, the regulation is of little use.

Catch Quotas

Fisheries agencies may determine that, in order to protect fish stocks, total catches should not exceed a certain amount called a quota. In the trochus fishery in the Cook Islands, for example, fisheries scientists have estimated that fishermen should be allowed to catch about 30% of the total trochus stock each year. Once this quota has been reached the fishery is closed.

The enforcement of regulations

In the case of national fisheries regulations, government staff, often fisheries or police officers, have the task of enforcing fisheries regulations. For a number of reasons the enforcement of national regulations is rarely successful. Effective national regulations rely on strong government enforcement around the entire country and this is both time consuming, expensive and sometimes traditionally impossible. Often, there is little stake-holder input into the formation of national regulations. The community is given no ownership of either the resource or the problem and therefore feels no responsibility or accountability. An alternative, discussed later at this meeting, is for fishing communities themselves to devise and enforce their own fisheries regulations. In the enforcement of national regulations, the following should be taken into account.

Education rather than prosecution

The first and most important aspect of enforcement is education, and prosecution should be regarded as a measure of last resort. Users of a resource, or managed area, should be made familiar with any regulations, and the reason for their imposition. Public meetings, radio talks, press articles, and poster displays may be all used to publicise regulations, and to provide the public with an appreciation of the need to have regulations. If the majority of users support the aims of the regulations, peer pressure becomes a strong deterrent to those disregarding the law.

The need for strong enforcement

Although prosecution should be regarded as a measure of last resort, necessary regulations must be rigorously enforced. Regulations which are imposed but unenforced, either due to insufficient enforcement staff, or to overly complex and impractical rules, will fall into disrepute. If regulations are unenforced, benefits will accrue to those who ignore the regulations at the expense of those who fish according to the rules.

The relevance of penalties

Penalties applied should be significant to the offender, and relevant to the offence. Although a small fine may be appropriate in the case of an individual taking undersize fish, the commercial fishing of high value species, such as lobster, should attract a large fine and gear confiscation to act as an effective deterrent.

The public cost of enforcement

Enforcement costs often account for a substantial proportion of the total costs of managing a fishery or marine protected area. The cost of transport for enforcement staff using vehicles and boats is high. This is particularly so in the case of open sea fisheries (involving fisheries patrol vessels), and in coastal fisheries where there are a large number of fish landing sites. Enforcement staff usually work in pairs, for safety reasons, and in order that corroborative evidence is available in the case of prosecutions. In addition, the preparation of documents for prosecution is expensive in terms of non-field time. In the worst case, the cost of policing regulations which are intended to maximise profits in a fishery could be greater than the benefits gained.

The application of regulations

In some cases, it may be preferable to apply a less direct regulation which is cheaper to police, than a more direct one that is expensive. It may be easier, for example, to prevent small sea cucumbers (below a legal minimum size) being purchased by a few processors than it is to inspect and regulate the catches of a large number of fishers working over an extensive geographic area. In this case, a regulation making it illegal to buy rather than to catch undersize species would be easier to enforce.

Although some undersize fish may still be caught, fishers would soon avoid taking smaller individuals which are legally unmarketable.

Finally, it is fisheries staff, fishing communities, and other stakeholders that **MUST** decide on the fair, practical and enforceable regulations that are required. Lawyers are there to assist in **FRAMING** these regulations.

Discussion

Discussions revolved around the input, output and environmental controls applied to fisheries. Mike King said that environmental controls have not been well used by fisheries authorities. An exception is in the use of closed areas.

Session 5: Size limits and other coastal fisheries regulations used in the Pacific Islands region

Aymeric Desurmont, Fisheries Information Specialist, SPC.

Aymeric Desurmont presented a booklet on “Size limits and other coastal fisheries regulations used in the Pacific Islands region”

This booklet followed from one of the recommendations made during the SPC Regional Policy Meeting on Coastal Fisheries Management Meeting that took place in Nadi, Fiji, on 17–21 March 2003, SPC’s Fisheries Management and Information Sections have compiled information on size limits and other coastal fisheries regulations used in the Pacific Islands region. This information is presented in a booklet, to which member countries and territories will be able to refer to when preparing fisheries regulations or by-laws.

Data has been organised by species in four columns as shown in the example below:

Species	Size limits	Other regulations	Country/Territory
<i>Birgus latro</i> Coconut crab	3 in (75 mm) carapace width for personal use	Bag limit (10 animals/person/day). No taking of egg-bearing females.	Guam

For “Species” and “Size limits” information, the exact wording of the regulation has been used. Information for “Other regulations” is a summary of the legal text.

Information compiled has shown that:

- few species are regulated;
- size limits can be indifferently applied to species, genus or families;
- there is no standard way to describe a species: it can be done by its common name only, or by its scientific, English and local common names;
- some scientific names used in the regulations have changed, making the regulation obsolete if no provision were made for such a change;
- surprisingly different sizes can be used for the same species (e.g. 75 mm and 152 mm carapace length for spiny lobsters).

Participants to the meeting are asked to verify, in the booklet, the information relating to their country/territory and indicate changes or additions that need to be made. They are also asked to comment on the contents and the way information is organised and presented, as well as to suggest ways to improve it and make sure it suits their needs.

Discussion

Palau said that one problem is that filleted fish cannot be measured. An additional problem was that undersize seafood species, such as mud crab, are imported and regulations are not applied in this case. Manu suggested that imports should be added to the existing legislation. There remains the problem of communicating these rules to the public. Samoa said that they did a lot of public awareness work.

Aymeric said that the booklet is not a legal document but could be used for reference by the fisheries officers in different countries. The booklet is based on information received from countries and is based on the need of other countries to have guidelines that could assist them.

Palau said that there needs to be research into all species before imposing size limits. Size limits have to be able to suit a particular species where it is, and it may not be useful to use regulations from other

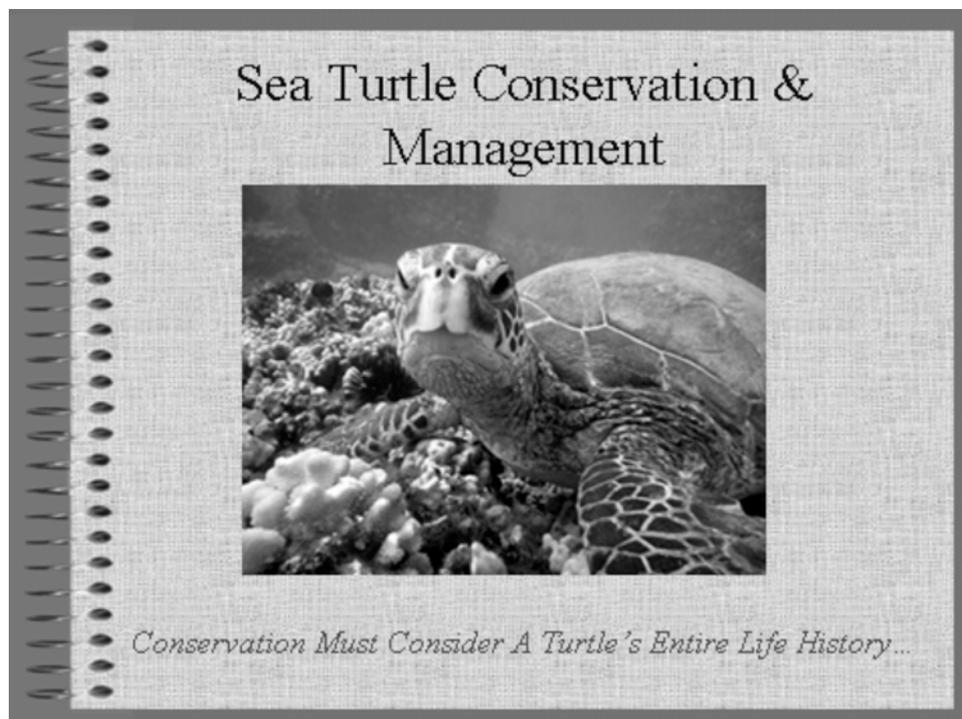
countries. Blaise Kuemlangan said the awareness of relative measurements from other countries is useful.

Hawaii said that this is a good model and it can be used by the council and others to develop their own size booklets. Aymeric said that the booklet can be posted on the SPC website and this can be periodically updated as information comes in.

Solomon Islands (Jean) asked if the website information could include a disclaimer because in the Solomons the act is not a legal document as yet. Vanuatu was also concerned on the inclusion of by-laws which are not and may not become legal.

Session 5: Sea turtle conservation and management

Irene Kinan



(power point presentation – no written summary)

Discussion

The conservation methods of the north Pacific loggerhead sea turtle stock was provided as an example of a tool employed for ecosystem based management. To recover sea turtles, conservation and management actions must take a species entire life history into account, including nesting beaches, pelagic migratory corridors, and coastal foraging ground. High rates of interactions between the coastal gill net fisheries of Baja California, Mexico must be addressed if fishery mitigation and management activities in the central Pacific (i.e., Hawaii) are to be effective. Additionally, information was provided on the regional sea turtle research and tagging database system currently under rehabilitation for SPREP.

Session 6

Ecosystem based fisheries management

Michael King

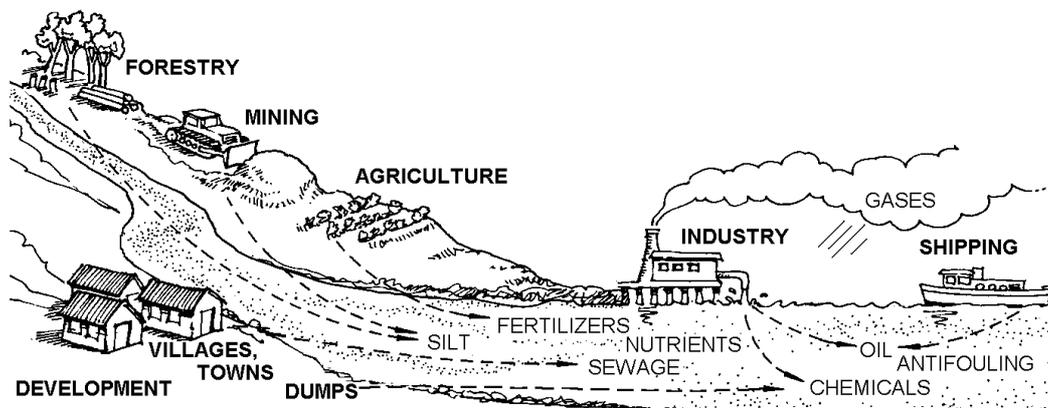
All fishing has some adverse effects on the environment. These effects include ...

- _ Physical damage to habitats (*eg fish drives across reefs, coral breaking*)
- _ By-catch of non-targeted species (*eg in fence traps, seine nets*)
- _ Effects on other species in food chains (*target species is both prey and predator*)
- _ Changes to the biodiversity of the fished area (*removed species may be replaced by others*)

Conversely, environmental degradation has adverse effects on fisheries. These include ...

- _ Wastes, hazardous chemicals, oil (*eg plastic, oil, rubbish dumps, factory wastes, TBT*)
- _ Reclamation and development (*destruction of wetlands and mangroves*)
- _ Siltation from poor land management practices (*from agriculture, forestry, mining*)
- _ Eutrophication - excessive nutrients (*from human and livestock sewage, fertilizer use*)

Many activities affect the marine environment including fish habitats and nursery areas. However, other than in areas of industrialization, development, siltation and eutrophication appear to represent the most serious problems.



Management of fishing effort and catch (eg by controlling fishing or limiting the quantity of fish caught) needs to be broadened to include the protection of the marine environment eg key habitats for species nursery areas. This approach is referred to as the ecosystems approach to fisheries (EAF), or sometimes ecosystems-based management (EBM)

Some (non-fisheries) actions are being taken. Examples include ...

- _ Sewerage systems (eg in Cook Islands) to reduce nutrient loads in lagoons
- _ EIAs required before starting new developments to reduce coastal destruction and siltation.
- _ Coastal tree planting by community groups (eg in Fiji) to reduce nutrient loads in lagoons

Implementing EAF involves the following steps.

- _ Identify and involve stakeholders
- _ Prepare map of ecosystems involved
- _ Determine threats to each
- _ Establish objectives and targets
- _ Establish strategies for achieving targets
- _ Prepare plan describing targets and strategies
- _ Seek support for plan/information material
- _ Design monitoring and assessment procedures

However, in the Pacific there are several problems in achieving an ecosystems approach to fisheries. These include ...

_ Separation of responsibilities
(often different agencies responsible for fisheries and the marine environment)

_ Lack of cooperation between government agencies
(who manages key habitats for fish stocks?)

_ Lack of appreciation of roles of NGOs
(many NGOs are focused on marine environmental issues)

What can be done?

Discussion

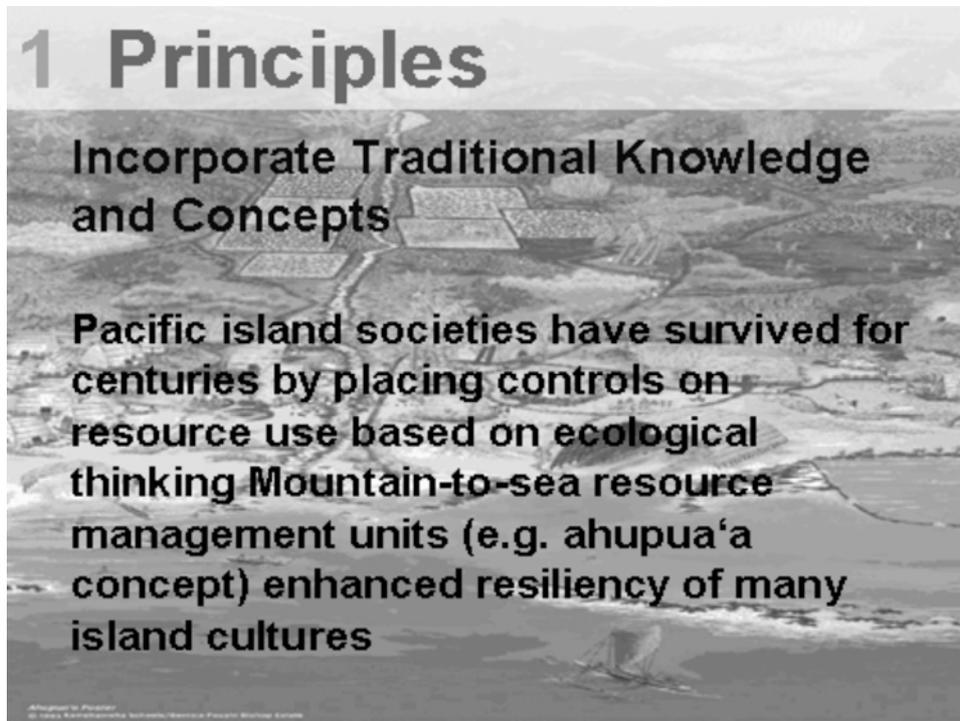
Discussions were on the point that all fishing has some adverse effects on the environment. The problems of achieving an ecosystem approach to fisheries include separation of responsibilities by the different agencies and the lack of cooperation between government agencies. Steve Why said that there was a lack of an ecosystem approach in the Marshals due to dysfunctional management.

Samoa mentioned the on-going dispute between DOE and the Fisheries Division regarding environmental aspects. There is always conflict in jurisdiction and work areas. The funding and source of funding can be a cause of conflicts in environmental management work – there is competition for funding. These conflicts result in the wrong messages being sent out to the people in communities.

Mike King reminded participants that one of the activities listed in the SPC strategic plan was to hold a workshop for senior staff from the environmental agency and the fisheries agency in each country to work out some of the problems of managing the marine environment.

Session 6: Ecosystem management – Hawaiian style

Paul Bartram



(power point presentation – no written summary)

Discussion

Discussion were centred on the ecosystem approach in Hawaii, the use of traditional knowledge and adaptive management based on learning from diverse experiences. This is a very different approach in trying to manage the ecosystem as there are always changes. Managers cannot control changes taking place in the environment and there can be no “one shoe fits all” approach. Management has to be adaptive.

Steve Beverly commented that this sort of management was practised 15 year ago, but has now been opened up and abused by the people. Paul said that one of the problems is the attitude of urban populations which is very different from that of rural populations.

Paul described windows of opportunity in which there are sometimes opportunities to intervene and respond to natural disasters - eg tsunami, boats running aground etc

Session 7

Fisheries management plans

Michael King

Are fisheries management plans needed? With NO management plan, fisheries agencies will need to take actions (and apply regulations) in a reactive way. That is, by responding to crises and problems as they occur. All fisheries agencies will recognize this *modus operandi*!

However, at least in theory, a management plan allows fisheries agencies to take actions and apply regulations in a proactive way. That is, by taking the initiative in controlling situations and by preventing problems occurring.

Management plans may be for particular species or for particular areas (or ecosystems). The former is justified if target species are few (eg deepwater snapper) and the ecosystem is not complex or threatened. The latter is necessary (and this is usually the case) if the fishery is multi-species and the ecosystem is complex or threatened. Whichever of the two, environmental issues that threaten a fishery must be addressed in a management plan.

Who should prepare management plans? In many cases, the task has fallen to fisheries agencies, environmental agencies, regional organizations like SPC, or consultants? However, most individuals associated with these institutions know much less about a particular fishery than those fishing in it. There is a good case, therefore, in involving fishers, fishing communities and other stakeholders in the plan's formulation.

A good fisheries management plan includes the following items.

Background, history and status of the fishery

developments; historical catch data; exploitation level

Threats to the fishery

both fishing (overfishing?) and environmental effects

Aims or objectives

the expected result of implementing the plan

Strategies

the plan of action needed to achieve objectives

Actions

the specific actions (including regulations) required

Risk analysis, monitoring plan and evaluation

actions to be taken if things go wrong! monitoring and reviews

Examples of time-lines, risk analyses, and log frames are provided.

Discussion

Discussions highlighted the need for management plans that allow managers to be proactive rather than reactive and the need for stakeholder involvement.

The Marshalls expressed a need for training in putting together a fisheries management plan – also in the use of risk analyses and log frames. There is still a lack of monitoring and evaluation for plans in the Marshalls and training is earmarked in the Regional Strategy. Also, management plans have to be in a form that is understood by the people. The organiser said, in response to this, that there could be a regional meeting workshop on fisheries management plans.

PNG said that putting together a management plan is not as difficult as it is to implement the plan - that is the challenge. Blaise said that management plans also provide the basis for regulations. Hawaii said that it is not the by-laws but how to implement them – that is, how to minimise the impacts.

Participants adopted a recommendation for training in the preparation of management plans and reports.

Session 8

Community-owned marine protected areas

Michael King

The value of Marine protected areas (MPAs) as a fisheries management tool is now commonly appreciated. Some MPAs are set up by fisheries agencies but most appear to be promoted by environmental agencies and NGOs. From the view of an environmental agency the aims of MPAs include the maintenance of biodiversity and the protection of the marine environment. From the view of a fisheries agency, the aims are to allow the stocks of some marine species to increase and, hopefully, result in increased catches in adjacent fishing areas. These varying aims are not incompatible.

Closed areas can be used to protect juveniles and the spawning stock. Shallow water mangrove habitats, for instance, are known to be nursery areas for many species and are permanently closed to fishing in some coastal areas. In some countries known breeding areas for species such as trochus are permanently closed to fishing.

Fishing can be banned either during particular seasons, or in particular areas, or both. If the spawning season of a particular species is known from traditional community knowledge, for example, a closed season at the time of spawning may allow adults to breed without interference. Turtles, for example, are protected in some countries during the egg-laying months of November to February. Closures can also be used to prevent stocks being overfished. Villages in Vanuatu have periodically banned the collection of trochus and green snails for specific periods. The closures were similar to customary taboos in design and enforcement but were also based on biological information provided by government fisheries staff. The exploitation of sea cucumbers for the export market in the atoll of Ontong Java in the Solomon Islands was high until village leaders closed the fishery during alternate years. In the years closed to sea cucumber fishing, the lagoon is open to trochus diving.

In Samoa, a large number of village communities have chosen to establish small areas closed to fishing in part of their traditional fishing areas. Although these community-owned marine protected areas are small, their large number, often with small separating distances, forms a network of shelters for fish around the coast. Such a network may provide the means under which adjacent fishing areas are eventually replenished with marine species through reproduction and migration.

From experience and a review of the literature there inhibiting factors in the establishment of MPAs. These include;

- _The inability to separate resource use and conservation
 - conflict between many resource users and between fishers and conservationists
- _Counterproductive lack of cooperation between agencies
 - separate agencies are often responsible for fisheries & environment
- _Reluctance to set up MPAs because of lack of information
 - although there is usually enough information to set reasonable boundaries
- _Debate over MPA management
 - should they be managed by fisheries or environmental agencies – or communities?
- _The global debate over small versus large MPAs
 - based on mistaken belief that it must one or the other

From the experience of those establishing MPAs, there are several lessons to be learned.

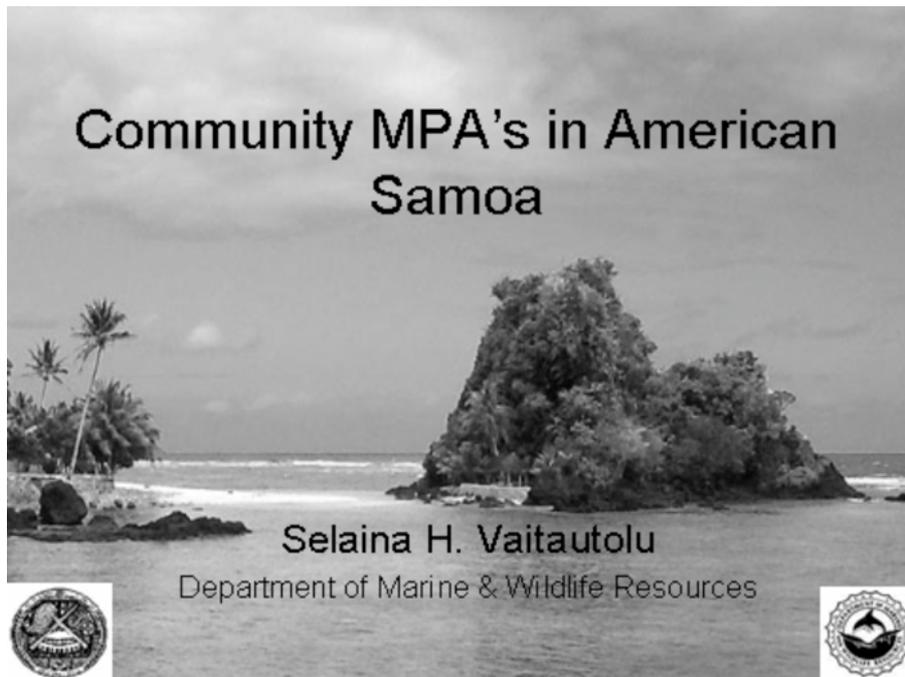
- _ Involve all stakeholders
 - communities, fishers, government agencies, NGOs
- _ Local communities must be involved from the beginning
 - lack of community support will inevitably result in failure
- _ Develop a legal framework to establish MPAs
 - this applies whether government or community based
- _ MPAs need to be integrated into coastal management regimes (ICM)
 - because of the interconnectivity of marine and coastal systems
- _ Set reasonable (not overambitious) boundaries
 - locking up large areas may result in reduced community support
- _ Monitor biophysical data, community support and management
 - community support may wane; management needs to be adaptive

Discussion

Interest in MPAs was as a tool for fisheries and environmental management. Placement of MPAs should be up to communities with advice from the Fisheries agencies. Mike King described a simple plastic bottle-drift method of studying currents that could aid staff and communities in recommending sites from which larvae could disperse.

Session 8: Community MPAs in American Samoa

Selaina Vaitautolu



(PowerPoint presentation – no written summary)

Discussions

Identification of problems with coral reefs resulted in the need for management. Selaina discussed factors contributing to coral depletion. Several actions have been taken at different levels. Community MPAs have been modified from the Samoa model and all avenues used to convince those with authority to be involved with the project. Work has been done in one village so far.

Marshalls raised the issue of scientific surveys and getting communities to accept the results. Selaina said that results can be put in suitable forms.

Samoa queried the use of terms like “fish reserve” and “MPAs” in fisheries management. Martin said that whatever term is used will depend on the national legislative framework. Steve Why said that permanently closed areas have benefits too. For example in Hawaii a permanently closed area is now a very successful tourism venture. Cook Islands said that communities are seeking many Raui (closed areas) in a small area.

Fiji asked whether MPAs are suitable being breeding ground for clams, etc. Mike King said that even small closed areas are effective as breeding areas for non-mobile species such as giant clams and trochus. New Caledonia described the opening of closed areas in New Caledonia and the effect on species. Blaise stressed the importance of really knowing the good and bad sides of allowing MPAs to be opened. The Cooks said that there are two forms of Raui- one for short term closures and the other for long term.

Tony Beeching discussed a working document that is being produced on MPAs. It is still in progress and many questions are being asked along the way. Definitions are still being debated, even at this stage of development in MPAs in Hawaii.

Session 9

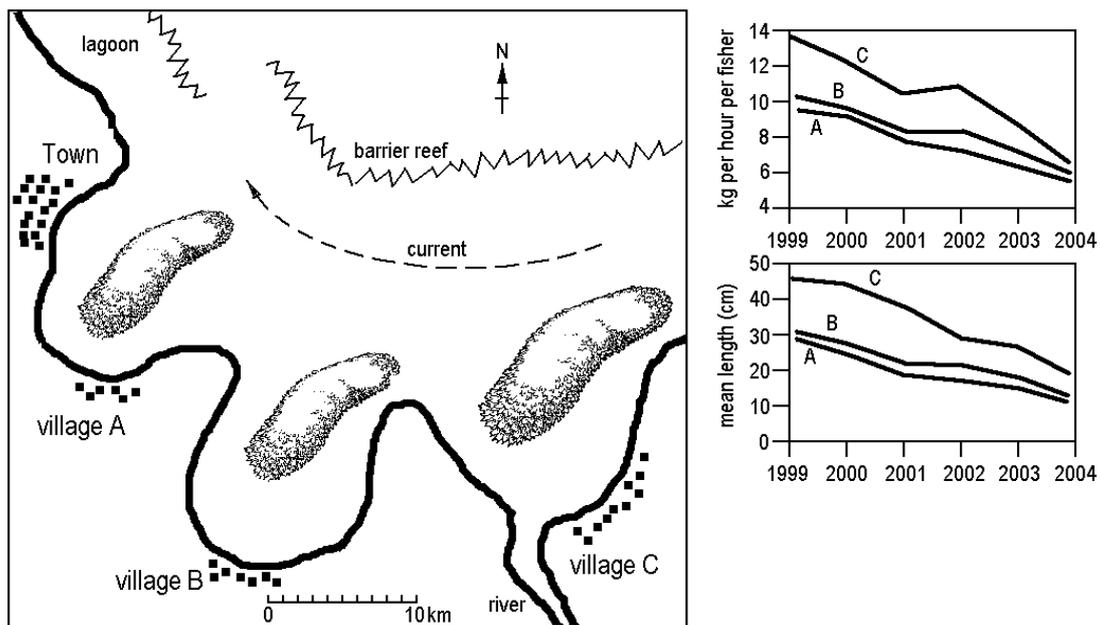
Community fisheries management exercise

M.King,

This exercise is based on a fishery for beche-de-mer. These are caught in the lagoon by fishers from three villages in three separate bays. Each village has its own community fisheries committee and processes the catch for sale in the nearby town.

Background fisheries information

- Fishers from villages A, B and C catch beche-de-mer all year round.
- A licensed export company in the town buys beche-de-mer from all 3 villages.
- Catches rates (numbers caught per hour per fisher diving) and the mean lengths of individuals in the catches have been monitored by the fisheries agency at the request of the villages (see graphs).
- Each village blames fishers from the other villages for falling catch rates. However, in village C, fishers also claim that silt from the River is affecting catches in the bay.
- From SPC data, this species of beche-de-mer appears to reach maturity in three years at a mean size of about 18 cm. Holothurians have separate sexes. This species spawns in November/December to produce auricularia then doliolaria larvae that settle on the sea floor within 10 days.
- There is a current which results in net water movement from East to West inside the reef.
- There are no fisheries regulations (national or community-based) applied to the fishery at present.



The three villages are concerned about decreasing catch rates and the loss of income for their communities. The fisheries agency has been asked to advise and assist. The preferred solution is for the communities to produce a fisheries management plan that all agree to.

Propose alternative fisheries controls that could be applied to the beche-de-mer fishery. Consider the disadvantages and disadvantages of each and compare the difficulties of enforcing each proposed regulation. Take into account sociological implications.

Discussion

Participant groups presented the results of their discussions in tabular form. The following is a summary.

PROBLEM	Decline in beche-de-mer population. Loss of income	
CAUSE	Overfishing/overharvesting. No management plan	
SOLUTIONS	Implement a management plan. Harvest control <ul style="list-style-type: none"> - size limits - quota systems - limits on commercial dealer closure during spawning season (Nov-Feb) Zone fishing grounds	
ALTERNATIVES	<ol style="list-style-type: none"> 1. Beche-de-mer hatchery 2. Seaweed farming 3. Trochus farming 	
	Advantages	Disadvantages
	<ol style="list-style-type: none"> 1. Replenish beche-de-mer stocks; Low mortality of recruits 2. Alternate source of income; food source; family activity; simple 3. Alternate source of income/food 	<ol style="list-style-type: none"> 1. costly; licenses 2. Acceptance; marketing 3. Acceptance
	Problems	Solutions
	<ol style="list-style-type: none"> 1. _ Catch rates 2. _ Catch sizes 3. Lost of income 4. Siltation 5. no regulations 6. Inter-village conflict 	<ul style="list-style-type: none"> _ catch rates _ catch sizes _ income _ Siltation Create village by-laws Resolve conflict
Management Measures	<ol style="list-style-type: none"> 1. Rotational closures (revenue sharing; shared responsibility in dealing with siltation) 2. Harvest ban during Oct-Jan (spawning season) 3. Introduce minimum harvest size limits 4. Moratorium on East-side of villages 5. Ban on Scuba and Hookah 6. Introduce quota system 7. Proper land-use practices 8. Alternative opportunities for fishers 	
	Advantages	Disadvantages
General Assumption: all villages cooperate	1. Maintenance of income; consolidated marketing; more animal reach maturity.	Less income (although steady)
	2. Chance for spawning/recruitment - Easy to enforce	Loss of income during spawning season. Poaching
	3. Spawning biomass at all times; more valuable; better market value.	Enforcement
	4. Spawning biomass at all times	Poaching/enforcement
	5. Fishing effort/power. Safety	Compliance
	6. Sustainable harvest and income	Dependent on expert opinion
	7. Decrease siltation; improve habitat	_ Possible conflict
	8. Relieves pressure on BDM fisher; Alternative income source	<ul style="list-style-type: none"> - Costs and training - Possible destruction of habitat

Session 10

Requirements for drafting fisheries legislation

Blaise Kuemlangan and Martin Tsamenyi

Blaise Kuemlangan and Martin Tsamenyi made a presentation addressing a number of important legal issues that need to be considered in developing and implementing fisheries legislation including: (a) scope of fisheries legislation, (b) role of law in fisheries management, (c) designing an effective fisheries legislative framework, (d) role of fisheries managers and of lawyers and (e) enabling community-based fisheries management through legislation

The presentation identified two types of fisheries legislation: (a) fisheries specific legislation and non-fisheries specific legislation. Fisheries specific legislation are developed and implemented by fisheries departments or agencies and address fisheries management, administrative and enforcement issues. Non-fisheries specific legislation on the other hand is various legislation that indirectly or directly impact fisheries management, but are controlled by other agencies. Examples include the constitution, environmental legislation, local government legislation and land use legislation. It is important for fisheries managers to be aware of these legislation and develop a strategy of working with the other agencies. The important point to bear in mind is that fisheries-specific legislation operate within a larger and more complex framework of legislation. This requires institutional coordination and cooperation to achieve the objectives of the fisheries-specific legislation.

There are three components to fisheries specific legislation: the management framework which incorporates the key management principles, the institutional framework and the monitoring and compliance framework. It is important that all three components are harmonised during the drafting stage of the legislation.

Generally, fisheries laws govern the behaviour of people who regulate or participate in the fisheries. Fisheries laws give effect to fisheries management policies and plans, prescribe the institutional structure for fisheries administrations and provide framework for compliance and enforcement. The fisheries manager is the agent for change in management practices. It is important for the fisheries manager and enforcer to have good understanding of the legal framework for the fisheries.

The fisheries manager must also play a key role in the process of developing fisheries legislation. To ensure easy passage and compliance, it is necessary to undertake detailed consultation with stake holders at the start. There must be an appropriate policy framework which is endorsed by government before drafting instructions are prepared. It is important to involve the fisheries lawyer in all the stages of the legislative development process. More importantly, where consultants are used to write the law, they must work through and with the Attorney-General's office or its equivalence in the country. Care must also be taken in the use of templates from other countries because legislation is site specific.

The presentation noted that the biggest challenge is not so much in writing legislation, but enforcing it. There are a range of factors contributing to the increasing lack of compliance with fisheries legislation. These include lack of knowledge of the law by fisheries managers and enforcement officers, lack of institutional capacity and lack of financial resources generally.

Legal Aspects of Community-based fisheries management

Community-based fisheries management is a response to the difficulties of managing and enforcing fisheries legislation in the conventional top-down management approach. It is important that there is a clear policy and legal basis for community based-fisheries management. Although there is general legal reference to some form of community-based fisheries management in most Pacific Island States, there are no clear policies and laws to give effect to it in many of the countries.

The presentation identified four legal basis for implementing community-based fisheries management. These include: (a) the Constitution; (b) customary marine tenure; (c) legislation and (d) judicial decisions. In addition to these possible generic legal basis, it is important that community based fisheries management is operationalised through fisheries legislation.

A number of key components of community-based fisheries management were identified. In fisheries specific legislation, the management framework must enable the participation of all stake holders in decision making, give power to designate community based fisheries management units (e.g. customary units, villages etc); and that these units should have clear rule-making ability. The administrative framework must also clearly address the relationships between the fisheries management agencies and other agencies. Additionally, the monitoring and compliance framework must specify clearly different roles and functions of the various community-based fisheries management units, including enforcement functions. Fundamentally, any community bylaws and regulations must be enforceable.

Where rule-making power is granted to other agencies, such as local government or district and town councils, there is need to remove conflict between the fisheries legislation and other legislation that establish these institutions. There are two legal options of achieving this coordination. The first is to align fisheries-specific legislation with the non-fisheries specific legislation. A second and preferred option is to amend the non-fisheries-specific legislation to remove the conflict. However, the preferred option may be difficult to achieve in practice because of the unwillingness of other agencies to amend their laws. The important lesson learnt is the need for the involvement of and consultation with all people and agencies that may impact the fisheries.

Session 11

National Reports

Summary of Presentations from the FAO Project on “Strengthening the legal framework for community-based coastal fisheries in the Pacific Island States of Micronesia”.

Representatives of the five Micronesian States, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru and Palau made brief presentations on the outcomes of the FAO project. The key issues identified include (a) the lack of effective legislation to enable community-based fisheries management, (b) lack of financial and institutional resources to support community-based fisheries management, (c) lack of or ineffective enforcement, (d) jurisdictional conflict with other agencies and lack of political awareness and commitment at the highest levels of government. The main recommendations proposed by the national workshops to overcome these problems include (a) the need for new legislation, (b) need for political awareness and policy development, (c) the need for community education, (d) the need for coordination at all levels of government and (e) the need for adequate financial resources to support management objectives.

Discussion

Palau asked FSM how it deals with different cultural and social needs and priorities. FSM replied that the national government gives it to each state to figure out how to deal with issues that are involved. Regulations are dealt with by counterparts in each state.

Kiribati was questioned on the conflict of national and provincial laws – by having more by-laws will there be more conflict? Kiribati said that there needs to be proper consultation between government and communities in by-laws. Bad drafting has resulted in problems.

Jean (Solomons) commented on the Kiribati presentation regarding the overlapping of jurisdictions. With large countries it is very complex when you have fisheries looking after offshore, and communities looking after coastal areas. Thus there is a lot of conflict, because of land rights extending into sea rights. PNG said that land ownership means ownership over dry land up to the shores. Ownership over marine areas and fishing rights are not recognized which causes problems.

Solomons gave an example of the extent of traditional ownership - a foreign vessel was arrested in Ontong Java reef and the fine money had to be shared with the customary council (even though the reef was far away).

There was concern from Palau on the live reef fish trade and its impact on the reef resources.

Steve Why asked whether species such as large wrasses will survive such a destructive trade in which spawning aggregations are targeted. Discussion on live reef fish trade took up some time as participants were concerned about the cases in their countries. The main concern from Palau was on the nature of the trade in which boats moved from one country to the next depleting resources. There is the need for a regional strategy and SPC should take this up and do something about it.

Vanuatu (Kalo) said that there are attempts in Vanuatu to put management plans in place and this has included consultation with stakeholders. Mike King said that there is no safe way of managing fisheries that deliberately target spawning stocks – at least on a sustainable basis - other than by banning the fishing method.

Fiji has put in place management strategies and has also managed to have humphead wrasse put into CITES as an endangered species.

Steve Why said that the live reef fish trade has a lot of impact on people and resources and the trade needs to be monitored and have sustainable collection mechanisms in place. In most cases Filipino divers are hired and local people lose out, not only in not being trained, but in gaining any benefits. Steve said he had strong views on the trade and impact based on previous work in the last few years in International Marine Alliance, a US based NGO which specifically looked at the aquarium trade and the live reef fish trade.

Blaise Kuemlangan said that CITES was a convention that also impacts on fisheries and that countries need to be aware of its impact especially with respect to species that are endangered and protected. It is particularly useful for fisheries officers to be familiar with this when dealing with the live reef fish trade, ornamental fish trade and coral harvesting.

There was however still concern voiced on the practicality of existing legislation and questions were directed to SPC on regional approach in tackling this issue. Palau again stressed that the question was raised to SPC on what is being done on the live reef fishery in the region. It was stated that SPC produces a bulletin on the live reef fish trade. SPC has had training and attachments on the live reef fish trade, and requests could be made to SPC for work on this.

Martin Tsamenyi offered an explanation of CITES in the context of working within the international framework, and governments. When a government agrees to a convention like CITES by ratification, the Convention does not necessarily bind persons within the country or change domestic behaviour unless there is legislation passed at the domestic level (enabling legislation) to make the Convention's requirements as part of the domestic law.

Session 11: Coastal fisheries management and its implementation: a case study in Tonga

Manu Tupou-Roosen

1. INTRODUCTION

Legislation holds a fundamental role in enhancing coastal fisheries management. There is a clear need for States to ensure adequate fisheries legal frameworks. However, we are all aware that in order to be effective, such laws need to be implemented. This presentation will illustrate coastal fisheries legislation and its implementation using Tonga as a case study. This case study will –

- (1) highlight Tonga's coastal fisheries legislation
- (2) examine the implementation of those laws, as well as problems thereof
- (3) provide some key aids to improve implementation.

This presentation should provide a useful example for States intending to draft similar legislation or for States who are faced with problems of implementing such laws. Before we look at Tonga's coastal fisheries legislation, it is important to first get an idea of what constitutes its fisheries legal framework.

2. TONGA'S FISHERIES LEGAL FRAMEWORK

The *Fisheries Management Act 2002* is the principal fisheries legislation for the conservation and management of fisheries resources in Tonga. No regulations have been made under this Act. Therefore, the regulations enacted under the repealed Fisheries Act 1989 "continue until...new regulations...are made". These regulations are the *Conservation and Management Regulations 1994* and the *Local Fishing Regulations 1995*. These regulations have been revised recently and a further three sets of draft regulations for Processing, Marketing and Export, Vessel Monitoring System, High Seas, Foreign and Test Fishing have been produced. The role of regulations is to provide subsidiary legislation for the principal Act. Therefore, certain draft regulations are intended to play a contributory role in enhancing coastal fisheries management and are noted in this presentation.

3. TONGA'S COASTAL FISHERIES LEGISLATION AND ITS IMPLEMENTATION

Tonga's coastal fisheries legislation can be divided into two types: (1) the provisions that underline co-management of fisheries resources by promoting broader consultations between the Ministry of Fisheries and stakeholders and (2) those provisions that build upon current conventional tools such as minimum mesh sizes and prohibited fishing gear. The following tools are discussed –

1. General considerations of the Minister;
2. Fisheries Management and Development Plans;
3. Fisheries Management Advisory Committee;
4. Special Management Areas;
5. Designated coastal communities;
6. Protection of coastal species;
7. Regulations.

3.1 General considerations of the Minister

In order to work towards sound fisheries management, the Minister is required to exercise any of his powers under the Act only after certain considerations have been made. Such considerations include –

- "the interests of artisanal and subsistence fishers" (s.4(h)); and
- "the need to promote...broad and accountable participation in the management and conservation of fisheries resources" (s.4(l)).

This principle of co-management in engaging other interest groups such as coastal communities and their fishermen in fisheries management moves away from the top-down approach which has been exercised unsuccessfully in the past. This principle recognises the first-hand knowledge fishermen hold about fisheries resources and that fishermen are an important resource that can be used in decision-making and implementation.

3.2 Fisheries Management and Development Plans

Co-management is incorporated into the preparation and review of fisheries plans as the Secretary is required to consult with those that the Plan will affect. Such consultations allow interest groups like a coastal community to play a role in planning policy. This can only serve to improve the relevance of management strategies.

Co-management is also encapsulated in the Act by providing that a management committee established under the fishery plan could include members of interest groups. This committee is responsible for the implementation and review of the fishery plan and can also be in charge of monitoring the performance of the fishery. Therefore, the relevant coastal community shall also play a role in implementation of the plan and monitoring the fishery. Placing such responsibilities with those with a self-interest in the proper management of the fishery contributes to enhancing coastal fisheries management.

The fishery plan can also affect fishing licences and authorisations. A fishing licence may be cancelled or suspended if “it is necessary...to give effect to [an effort control tool] specified in the plan. An example of such a tool is a seasonal closure. This can be a powerful tool for management committees in working towards sound coastal fisheries management.

The significance of fisheries plans in the management and development of resources should not be under-estimated. Such plans are intended to provide crucial information on the state of the fishery and guidance as to how the fishery needs to be developed and managed. In addition, fisheries Plans carry an advantage over legislation as they only need the approval of the Minister and gazetting in order to come into effect. As policy, it should be possible to amend the plans easily “in-house” without any undue delays. However, where necessary, the conservation and management measures in the Plan can hold a firmer legal basis as regulations. Tonga is developing two fisheries plans for the aquarium fishery and for seaweed. When drafting these plans, the Ministry of Fisheries implemented the requirement in the Act for broader consultations with interest groups by consulting with stakeholders at community and producer level.

In addition, the draft regulations use the concept of the fishery plan to regulate fishing for particular inshore species namely, beche-de-mer, trochus, green snail. These regulations stipulate that such resources can only be harvested subject to a fishery plan. Basically, no fishery plan, no harvesting of these resources. Beche-de-mer, in particular, has been harvested in the past in Tonga to near extinction. This requirement therefore forces management authorities to assess the present level of exploitation of these resources and state appropriate measures for their management and development. Ideally, Tonga would have a fishery plan for each commercial fishery. However, due to the severe constraints the Ministry of Fisheries faces, it is wise to prioritise their efforts and concentrate resources on developing and implementing fisheries Plans for those coastal species reported to require immediate attention.

3.3 Fisheries Management Advisory Committee

The Minister is required to establish the Fisheries Management Advisory Committee to advise him on “matters relating to the conservation, management, sustainable utilisation and development of fisheries”. The Act further supports co-management through the composition of this Committee, which includes representatives from the coastal communities and local fishermen who shall be involved in national, rather than just community-based, consultations on fisheries management.

Another method by which this Committee shall engage more members of coastal communities in decision-making is where the Secretary refers an application for a licence, permit, authorisation or renewal thereof to the Committee for review. For this review, “the Committee shall co-opt any person from the community that has the responsibility for the subject of the application”.

In addition, the Committee may co-opt any person representing commercial fishers, women, local fishermen, coastal communities or such other persons with particular expert knowledge or skill to be a member “to assist it for a specific purpose”. It can only enhance coastal fisheries management to engage active participation from members of interest groups.

The Fisheries Management Advisory Committee is yet to be established. It is essential that this Committee is established to provide the Ministry with additional assistance in planning fisheries management.

3.4 Special Management Areas

The Act provides another essential coastal fisheries management tool by allowing the Minister to declare any area of the fisheries waters to be a special management area. Such areas can be “for purposes of coastal community management, application of certain conservation and management measures, subsistence fishing operations or other specified purpose”.

The draft regulations stipulate measures that apply to all special management areas. No person is permitted to fish in these areas, unless it is for subsistence or research purposes. The only net that can be used in these areas for subsistence fishing is a cast net. Alternatively, the Ministry of Fisheries may determine specific measures for each special management area on a case-by-case basis.

Tonga has established two special management areas. Local fishing vessels are allowed to fish in these areas. These areas are not allocated to any coastal communities. Therefore, by virtue of the Act, these special management areas fall under the responsibility of the Secretary. The draft regulations propose the establishment of three additional special management areas. However, an important concern is their demarcation. Tonga operates on an open access system, whereby all Tongans may fish anywhere within the fisheries waters. Hence, proper demarcation of special management areas is essential for proper regulation and the implementation of applicable measures. Appropriate maps of these areas should also be included in the regulations.

3.5 Designated coastal communities

The Act further recognises the significant role that coastal communities can play in inshore fisheries management. The Minister may consult with the Fisheries Management Advisory Committee and designate any local community to be a coastal community for the purposes of community-based fisheries management. This designated community may be allocated a special management area. The Minister may also set out that community’s rights and responsibilities in relation to that special management area.

The designated community is further empowered through the requirement that it “organise itself and its operations or administration in a manner that is conducive to the effective conservation and management of fisheries resources in [that] Area”. This requirement underscores the role of the coastal community in making decisions regarding coastal fisheries resources that affect them.

Furthermore, where the Minister makes regulations which relate to a fishery plan for a special management area, he is required to consult with the Fisheries Management Advisory Committee and the coastal community designated responsibility for that area. The Act empowers a designated coastal community further by providing that a licence shall not be issued without prior consultation with that community. This requirement contributes to enhancing coastal fisheries management by ensuring again that those with the most interest in the fishery and who hold primary responsibility are involved in decision-making.

The Ministry of Fisheries has had requests from two communities to be designated as coastal communities in accordance with the Act. Extensive consultation and the agreement of the adjacent coastal community or communities to a special management area are essential for the successful implementation of any associated fishery plan. Therefore, the Ministry are designing a process by which those communities will develop the fishery plan for their respective special management areas. Engaging the coastal communities in this manner allows those who are closest to the resources of the special management area, in terms of location and knowledge, to ensure appropriate management measures are incorporated into the fishery plan. The Ministry of Fisheries could assist in developing and implementing the fishery plan by providing technical expertise such as the biological aspects of the resource and any necessary training.

As noted earlier, Tonga operates on a system of open access to fisheries. It is essential for a designated community to ensure its special management area is demarcated properly. It is crucial to provide security for the designated community that management measures for the area are respected not just by its members but also by those from outside the community. Access will therefore need to be limited to the special management area. This limitation is crucial to safeguard the food supply of the coastal community and to provide them with an incentive to conserve fisheries resources for the future. One idea that is currently being explored by the Ministry of Fisheries is to only license certain community or non-community fishers to fish in such areas.

3.6 Protection of coastal species

The Act provides yet another essential tool that can be used specifically for coastal fisheries management. By Notice in the Gazette, the Minister may declare any fish as a protected species. No person is permitted to catch, deal in or have in his possession any fish that is declared a protected species.

In addition, the current regulations provide conservation and management measures for these particular inshore resources namely, spiny lobster, slipper lobster, triton shell, giant clam, winged pearl oyster, turtle, mullet and beche-de-mer. The draft regulations build on these provisions by adding to them as well as including other species for protection namely black lip oyster, octopus, trochus, green snail and the aquarium fishery. The draft regulations build on these provisions and add the following species. Where relevant, a general management measure used to protect these species are minimum harvestable sizes. An example of a specific measure is the prohibition on inter-island transfer of pearl oysters without the written permission of the Secretary.

The Minister may also make regulations to control the export from Tonga of any species, type or size of fish...where such action is required for the proper management of a fishery. The draft regulations elaborate on this provision by providing that a licence to export fish or aquarium fish for commercial purposes is subject to the relevant fishery plan. The draft export regulations also provide that a licence to export fish for commercial or domestic purposes is subject to any restrictions made in the conservation and management regulations. For example, in these draft regulations there is a limit on the amount of giant clams that can be exported for private consumption.

The draft regulations also increase the distance between fish fences from 200 metres to 1000 metres as a management tool to reduce intense fishing of coastal species. Other tools include increasing the mesh size of the net used for fish fences and limiting the numbers of fish traps that can be used.

In addition, by applying the requirements of the draft VMS regulations to local fishing vessels that fish commercially, the Ministry of Fisheries will be able to monitor such vessels' activities in coastal fishing areas and not just the activities of foreign fishing vessels and locally-based foreign fishing vessels.

3.7 Regulations

The Minister may make regulations on a variety of areas. Express areas noted in the Act that he may regulate on are coastal communities and special management areas.

4. AIDS TO IMPLEMENTATION

Two fundamental aids to implementation of coastal fisheries legislation are –

- (a) public awareness
- (b) training within government administrations.

The following aids to implementation are presented in broad terms and do not apply just to Tonga's situation. Increasing the knowledge and understanding of the public as well as fisheries and related officers about the need for sustainable utilisation of fisheries resources and the need for any new management tools is crucial to the implementation of any coastal fisheries management tool, whether this tool be in the form of regulations, by-laws, fisheries plans, special management areas.

4.1 Public awareness

Wherever possible, it is important to make use of traditional systems of authority within these coastal communities when publicising and implementing such tools. Tonga has town and district officers who can assist by holding village meetings for this purpose. The employment of traditional systems has proven to be successful for fisheries management initiatives in Samoa. Customary fisheries management in the Solomon Islands has also been effective.

Fishermen's associations is another means for publicising any new coastal fisheries management tools to the fisher community. Obtaining the cooperation of stakeholders improves the dissemination of information. Public awareness can also be raised through appropriate media.

- (a) This can include news presenters (radio and television. Television and videos are most commonly found in urban areas which is where most commercial fishing takes place).
- (b) Such presentations could highlight the cost of failure to comply with the law through publicising depletions in stocks.
- (c) Such awareness campaigns should be presented in the official or national language and wherever possible in the language or dialect of relevant communities.

This awareness campaign could target and utilise local authorities (often the elders in the village), women, children, and school teachers. The family and community networks within these Pacific communities can be used to assist in promoting conservation and management measures and assisting in their implementation.

4.2 Training within government administrations

Training within relevant government administrations is critical. This can occur on a few levels –

- (a) the training of relevant government officers on the significance of general fisheries conservation and management and the need for any new coastal fisheries management tools. Such training should include those responsible for enforcement to ensure they document incidents thoroughly. Such documentation provides a State with information that can assist in budgeting for monitoring, surveillance and enforcement;
- (b) encourage a dialogue between the Ministry of Fisheries and coastal communities and their fishermen by requiring fisheries officers and villagers to cooperate in implementing management programmes at a village level;
- (c) appoint a fisheries officer at the head office whose role is to oversee the implementation of coastal fisheries management tools and act as the contact point for local fisheries officers and local authorities, for example, when they experience difficulties in implementation.

Clearly, these suggestions on training need to be implemented in steps as short and long-term work strategies.

Finally, whether it be increasing public awareness or training government officers, such programmes need to be reinforced.

5. CONCLUSION

In conclusion, the implementation of Tonga's coastal fisheries legislation has been difficult and due particularly to the shortage of technical and financial capacity of the Ministry of Fisheries. However, with overseas assistance such as technical expertise in the Tonga Fisheries Project, an AusAID funded project, Tonga is progressing towards implementation of the crucial tools for coastal fisheries management in its legislation.

Session 12

The implementation and enforcement of fisheries regulations

Eric Kingma



Discussion

Presentation by Eric Kingma gave a PowerPoint presentation and made the following points. In order to enforce regulations, there must be legislation in place to give communities authority to manage fisheries, and there should be a CBFM plan in place with corresponding regulations. If there are no regulations, it makes enforcement very difficult, because regulations are the back bone of the CBFM plan.

He said that there are basically two types of compliance: a) voluntary compliance and b) enforcement compliance. Voluntary compliance of CBFM regulations is important because it does not require the expensive enforcement assets (i.e. boats, planes) to promote compliance. Within the category of voluntary compliance there are two categories which increase compliance of regulations: 1) self-ownership of marine resources and 2) community ownership of marine resources. Under self-ownership, fishermen voluntarily comply with regulations because he or she believes it's the right thing to do or that by not cheating more fish will be around tomorrow to catch. Self-ownership is driven by various values such as conserving the resource for future use or generations or unwillingness to cheat other fishermen. Under community ownership, fishermen comply with regulations because there is community pressure to conserve the resource. Often community ownership is driven by a collective moral, and those caught breaking such morals are often ostracized within the community. Community or peer pressure increases compliance of regulations as fishermen caught cheating would be bringing shame on to his or her family. For all aspects of voluntary compliance, education and outreach is critical in helping fishermen understand the CBFM regulations and values/morals behind them.

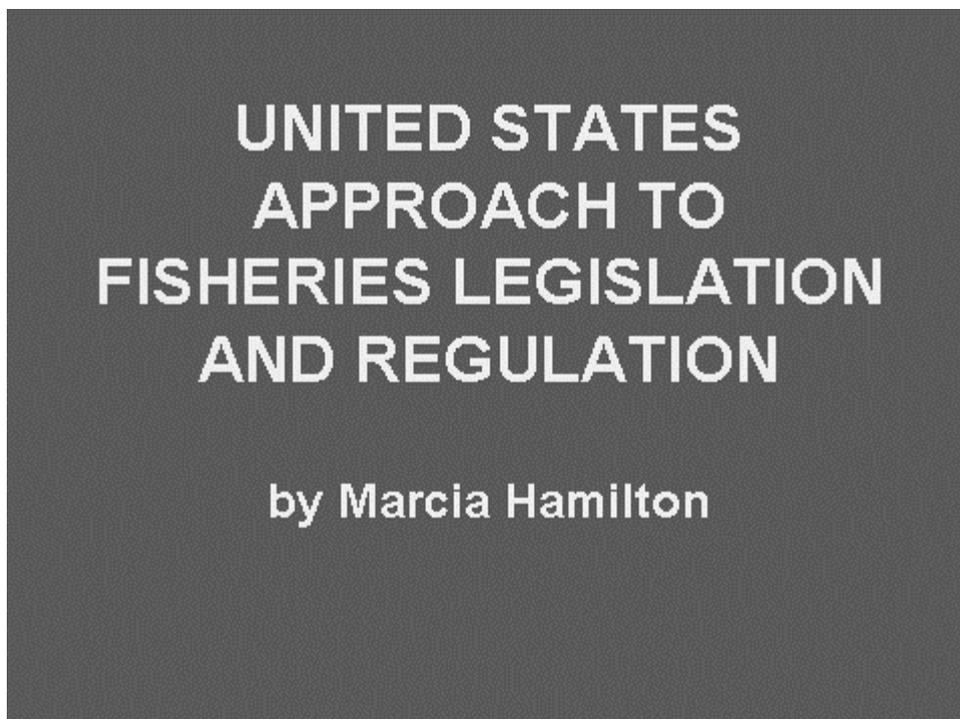
Enforcement compliance involves having a visible enforcement presence on the water. This increases compliance because enforcement agents are present and watching a fishermen's operation. Enforcement compliance is more difficult in CBFM because it involves man hours, as well as enforcement assets, which are often lacking in communities.

When drafting regulations its important to understand the following: If the incentive to violate is greater than risk of getting caught or the penalty, then one must re-evaluate the CBFM plan's objectives, regulations, and penalties.

A question was asked about the coast guard knowing the legislation Eric replied that there are two enforcement authorities that work closely with boarding teams and local enforcement teams. Thus they are involved with most regulations and are aware of new regulations.

Session 12: United States approach to fisheries legislation and regulation

Marcia Hamilton



(PowerPoint presentation – no written paper)

Discussion

There are 10 national standards with which all FMPs and regulations have to comply.

1. Prevent overfishing
2. Use the best available science
3. Manage stocks as a unit
4. Do not discriminate between states; any allocation must be fair and equitable.
5. Consider fishing efficiency
6. Consider differences in fisheries and resources
7. Minimize costs
8. Consider and sustain communities
9. Minimize bycatch
10. Promote safety at sea

Session 13

Use of community by-laws in fisheries management

Ueta Fa'asili & Etuati Ropeti

Background

Over the many past years, most of the waters surrounding the islands of the Pacific countries were untouched, and the beauty of the underwater world was seen as a major attraction. Corals of different forms had provided a naturally arranged beauty of different structures. Reef fish of many types added colour to this beauty. Reefs and lagoons were rich in food sources and able to sustain the demand of coastal dwellers.

As years went pass, population expanded and the demand for fish and shellfish has increased. People were attracted to employing the most effective but often destructive ways of fishing. These include breaking corals through traditional methods, fish poisoning, using of explosives and many others. Poor land management that caused soil erosion and unregulated infrastructure development along coastal areas contributed to the fast deterioration of the marine environment and its resources. It is now realized that many of these practices are very destructive to the marine environment and its marine lives. National fisheries agencies, environment departments and non government organisations (NGOs) have promoted the involvement of local communities as an alternative approach in the management of inshore and subsistence fisheries. Through this approach, village fisheries by-laws can be an important tool for the management of fisheries resources in many Pacific islands.

What are village fisheries by-laws?

Village Fisheries by-laws are simply village rules that have been promoted by communities through the initiatives of village leaders – normally traditional chiefs. Sometimes village fisheries by-laws carry the similar purpose as fisheries management ordinances in other Pacific island countries such as Marshall Islands. Fisheries management ordinances are promoted by atoll councils, while village rules are promoted by the “Taupulega”- council of community leaders in the case of Tokelau-, and the “fono”-council of chiefs in the case of Samoa. These are rules devised to ban harmful fishing practices by local and surrounding village residents and may include size restriction of fish and shellfish and their seasonal harvests. Such rules are required to go through a legal process to be able to accord legal recognition by the court of laws. By-laws being community oriented rules, they can be easily devised to overcome a village concern over its fisheries resources. They are probably the easiest form of legal instrument to modify and revoke if the concern no longer exists. They can be modified at anyone time to suit the village situation. By-laws can be enforced on a day fixed in the by-law provision usually after a certain period of days after the date of publication in the Government Gazette. Until this time the village communities will not be able to enforce them. Importantly, by-laws must apply to all citizens equally -not just people from outside the sponsoring village. Table 1 lists examples of some common fisheries regulations now being taken over by Communities as their own by-laws in Samoa.

Table 1: Community Actions and Regulations in villages in Samoa (Figures in the right-hand column indicate the percentage of all villages using the particular action as their own by-laws).

ACTION/REGULATION	PERCENTAGE
• Banning the use of chemicals and dynamite to kill fish.	100%
• Banning the use of traditional plant-derived fish poisons.	100%
• Establishing small protected areas in which fishing is banned. *	86%
• Banning other traditional destructive fishing methods (e.g. smashing coral).	80%
• Organizing collections of crown-of-thorns starfish.	80%
• Enforce (national) mesh size limits on nets.	75%
• Banning the dumping of rubbish in lagoon waters.	71%
• Banning the commercial collection of sea cucumbers (Holothuroidea).	41%
• Banning the capture of fish less than a minimum size.	41%
• Banning removal of mangroves (in villages with mangroves).	27%
• Restricting the use of underwater torches for spear fishing at night.	21%
• Banning the removal of beach sand.	14%
• Placing controls or limits on the number of fish fences or traps.	<10%
• Prohibiting the collection of live corals for the overseas aquarium trade.	<10%
• Banning the coral-damaging collection of edible anemones (Actinaria).	<10%

Inception of Village Fisheries by-laws

The good thing about by-laws is that they are community oriented and community owned. Often initiated by communities for proper conservation and management of fisheries resources. The good example of how village fisheries by-laws have been initiated is explained in the case of Samoa,

In mid 1980s, fish and shellfish of Samoa experienced serious declines in catches. The causes were realised to include over-exploitation, the use of destructive fishing methods, and environmental disturbance. The situation had caused concern to the Government and a large number of the villages communities. Because of this concern, village communities through their village *fono* began to use local media to advertise village rules to prevent further decline of their fisheries resources. Advertisements reiterated the ban on the use of explosives, chemicals and other destructive fishing methods and expressly prohibited nearby villages fishing in their respective lagoons. Advertisements included penalties to be paid to the *fono* for any breach of village rules by their own residents. For breach by outside villages, advertisements included threats to taking legal action against them. While the enforcement of village rules within individual communities was relatively easy, problems were experienced with enforcement to outside communities.

The Fisheries Division recognized the initiative by the *fono* as an excellent avenue to introduce effective management regimes for Samoa's inshore fisheries. However, it was realised that some village rules contradicted few Government laws. This had resulted in the *fono* not being able to pursue court action against breaches by neighboring villages. For that reason, the Fisheries Division felt that the village *fono* should be given assistance in legalizing the rules that facilitated the conservation and management of fish and shellfish in their respective lagoons. When the Fisheries Act 1988 was devised, a provision to permit rules set by the village *fono* to be given legal recognition was included. To this end, the Fisheries Act was specifically designed to include provisions dealing with procedures upon which village *fono* could declare its own rules as by-laws. These in essence are village rules that have been accorded legal recognition; hence the inception of village fisheries by-laws.

The By-law formulation Process

The process upon which by-laws must adopt should cater for community by-laws instigators, national fisheries agency as facilitator and the Attorney General's Office as the clearing agent. By-laws should be transparent as widely as possible. The suggested by-law formulation process is mainly based on the procedure employed by the Samoa Fisheries.

Step 1: By-law formulation

Unregulated practices and destructive fishing methods normally give rise to the establishment of village rules (by-laws). In other words, village rules can only come about when there is a serious concern by a community over certain problems. It is therefore appropriate for communities to initiate their own rules to overcome such problems. In most Pacific islands, village council often made up of community leaders decides on the types of rules that are likely to overcome such problems. They normally call special meetings to address village matters and to determine the kind of village rules that may be imposed to resolve the problem. The process by which community leaders address the problems to come up with village rules may refer to as "by-law formulation".

Step 2: Consultation process

For village rules to be recognised legally, it must go through a process to involve relevant government agencies which is normally Fisheries in case of village fisheries by-laws. It is necessary to involve a Government agency which is by legislation charged to administer the management of fisheries resources. The involvement of a Government agency (Fisheries Department) would determine whether or not such village rules are appropriate under a given provision of the Fisheries legislation. Village rules while they are important to resolve problems incurred within the community itself, they must not override or contradict main Government laws. It is important that the community leaders discuss their village rules with Fisheries Departments to point out any discrepancy that may contain within their rules. It is usually a good opportunity for the community leaders to understand more on related matters concerning use of village rules as village fisheries by-laws – such as the authority of the community over the by-laws. The gathering of the community representatives and Fisheries agency to discuss individual village rules may refer to as "Consultation Process". Consultation process brings together representatives of the community and the Fisheries Department to examine the details and make changes as appropriated to the rules proposed by the community.

Step 3: Final checking and clearance by the Office of the Attorney General

In most if not all Pacific island countries, matters requesting legal status must go through the office of the Attorney General. This is required because Government lawyers would deal with by-law breakers on behalf of village communities. They are the ones to point out any legal implication of the by-laws to the community.

Upon agreement reached by the community leaders and the Fisheries Department, the village rules must be submitted to the Office of the Attorney General for final checking. In this step, the rules are also written into their legal and proper forms to become village fisheries by-laws.

Step 4: Signing of the by-laws

In most legislations, by-laws and regulations required one or few signatures of a senior Government officials before they proceed to the next step. It is suggested that the level to endorse village fisheries by-laws must vest under the Permanent Secretary's authority. The higher the authority requirement as may be dictated under relevant legislation, the more complicated the process may be and hence the slack in the by-laws implementation. When every by-law are checked and finalized, they are returned to the Fisheries Division for the signature of the Permanent Secretary of the Fisheries.

Step 5: Gazetting, Publishing and Distribution process

By-laws need to be transparent as widely as possible. They need to be gazetted by a government agency appropriately the Legislative Assembly. They are required to be published in local newspapers and distributed to neighbouring villages. The distribution of the by-laws to neighbouring villages is necessary because they are the people most likely to breach them if they were not fully informed.

By-laws would normally come into force after a certain fixed period stated in the by-laws. Until that fixed period is reached, by-laws cannot be enforced.

Step 6: Monitoring and Enforcement

The last and most important part of the process deals with the monitoring and enforcement of the by-laws. Since by-laws are community owned, the community themselves should be vested with authority to monitor and enforce its own by-laws. To monitor by-laws, villages owing the by-laws would put signboards along roadsides and beaches to inform the public of the areas in which their respective by-laws apply. Communities variously build watch houses; patrol canoes and routine use of watchmen to monitor illegal activities in their lagoons and marine protected areas.

Fine for breaching by-laws

Once by-laws come into effect, breaches by individuals from the village sponsoring the by-laws can be dealt with by the village *fono* using traditional fines such as provision of pigs, taro and others. For breaches by outside village communities, they are handled through the court of law. The sponsoring village of the by-laws would normally report any breach to the fisheries Department. Both the Fisheries and the village community would take up the matter with the Police or the Attorney General's Office. If anyone is proven guilty, he shall be fined according to what is being specified under the by-laws. The fine should go to the village community sponsoring the by-laws to help in the implementation of by-law management activities. Level of the fine must vary according to the seriousness of the breach.

Advantages of Village by-laws over Village rules and Government laws

While most of the rules set by village communities to govern the management and conservation of their fisheries resources must receive full support from Fisheries agency, the rules are only applicable to members of that community. In cases where people from outside a village come into local waters, the community may be powerless to insist that visitors obey local rules. Village rules therefore can not receive legal recognition and therefore cannot be used to take court action. An example of this would be the banning of outside communities from fishing the Marine Protected Area of a sponsoring village. In some countries, legislation may allow for land lying below the line of high water mark to be declared as public land. Being public land, it would permit any person to fish anywhere including the area declared by the sponsoring village as its Marine Protected Area.

In some countries, various legislations have been passed to prohibit harmful fishing practices. Others have Fisheries Regulations to restrict the harvest of small fish. Such Government legislations have not proven effective and the basic reason being that most island countries do not have adequate resources (both funds and manpower) to monitor and enforce legislation.

On the other hand, village Fisheries by-laws are village rules that can be monitored and enforced by the village communities. Village communities could take existing Fisheries regulations to form major parts of their by-laws. Customary fines are imposed on residents of villages that own the by-laws. For outsiders, the village community could take legal action against any breach through the court of law.

An important aspect that has been noticed in the by-law development in Samoa is that, the communities through the guidance of the village *fono* are more active and committed when the rules belong to them. By-laws form an important part the village community management plan. The main advantage of the by-laws over the regular laws concerning fisheries is that by-laws are monitored more effectively than those of regular fisheries laws. Given the limitation of resources and personnel, many laws set by Government where police are the enforcement authority, are hard to police and so can not be effectively monitored. By-laws on the other hand are created by people with real interest in the management and conservation of fisheries resources in question. Community itself is inclined to ensure that they are properly monitored and enforced.

Problems

While by-laws are seen to work very effectively, there could be problems expected between village communities and Government agencies. In some village communities, disruption due to internal differences amongst the community leaders can not be avoided. When that happens, monitoring of by-laws can no longer function properly and enforcement can not be effective

From the Government side, the process involving other Government agencies may not prompt enough to meet the expectation of village communities. When there is a delay in the process, the village communities may go ahead and enforce their by-laws before the legal procedure is completed. While the by-laws can be enforced amongst the residents of the village that owns them, enforcement against the nearby villages will be difficult and could involve the use of physical force and hence fights between neighbouring villages.

Fisheries agencies must realized that the cost involved in the by-laws formulation process especially the advertisement of the by-laws can be very high. Quite often it is difficult to determine the number of villages that will be asking for by-laws. Fisheries managers may find it tough to ask for a big amount otherwise they have to be well prepared to justify such cost before the Treasury. Implementation of by-laws does not yield immediate effect to the environment which is something that decision making authorities do not pay too much attention.

Conclusion

The success of village by-laws is related to community ownership. Regardless of legislation or enforcement, the responsible management of marine resources will only be achieved when fishing communities themselves see it as their responsibility. Communities of villages which set their own by-laws are more likely to respect and abide by these rules than those set by a government authority. Village by-laws, therefore, represent a fisheries management tool, which has great potential for solving many problems involving the conservation of the inshore marine environment. This tool has not been taken advantage of by authorities in most Pacific Islands. Village by-laws have become a key part of village Fisheries Management Plans created under the community based Fisheries Extension program operated in Samoa (King & Faasili 1997).

Discussion

In answer to questions on the costs of patrolling ,etc on traditional fishing grounds, Etuati replied that there is not much cost as the villages do the enforcement themselves.

In reply to a question on penalties from the Solomon Islands, Etuati said that offences could range from just swimming in the taboo area, or fishing in restricted areas. If caught fishing in a reserve, then the offender will just come to the village council meeting house, and the village council then disciplines the person. These are within the Village Fono Act. By-laws are there to ensure that breaches from outside villages can be dealt with. Penalties are included and have been amended since 2002.

Problems include conflicts within villages, slowness in the drafting by-law process, and the cost of publicizing bylaws. Villages fund this through their own village fund raising. And if compliance rate is not good then there is continuing in-flow of money.

Martin asked which part of the Samoa model will be suitable or the most appropriate to use in work in other countries. Etuati replied that it will be difficult to implant in other countries without adapting the cultural process. Ueta said that the principle of using the community approach can be used elsewhere.

Palau said that the Samoa model works because of the constitution having the clause on the protection of customary rights.

Blaise pointed out that the Samoa model is good and may be applicable in some other Polynesian countries but cannot be used in other countries without modification to meet the peculiar needs of the country concerned. The situation is complex in Melanesian countries and there is a need to look at other models and at how things are done in other countries. Fiji has one of the oldest constitutions in place and have their own management model which has worked for them. Therefore there is merit in trying to look at the Fiji Model and all the other models practised around the Pacific and adopt what is workable.

Session 14

Practical on Fisheries Legislations (group exercise - the law review process and substance)

Blaise Kuemlangan, Martin Tsamenyi, Manu Tupou

Introduction

The approach for the practical session is in fulfilment of the practical training session on the drafting of legislation anticipated in the Workshop Programme.

It was emphasised that skills for drafting legislation in the strict sense cannot be imparted in a one-off training workshop, not to mention generality of the workshop theme and the few hours of the session allocated to the subject. Such skills are normally acquired by specialists after extensive training and practice. What is achievable under the circumstances is to train participants to be aware of the issues involved in drafting of fisheries legislation, the main components of an optimal coastal fisheries legislative framework (the main features of such framework) that will facilitate sound fisheries management generally and community-based fisheries management (CBFM), and to become familiar with the process for enacting or promulgating CBFM regulations. Such training will enable the participants to recognise the factors and considerations whether at the international, regional and national (local) level that impact on legislative drafting so that they become more involved, influence the process and effectively encourage the development of fisheries legislation or regulations that incorporates the components required for sound fisheries management. For CBFM regulations, participants will be trained to become familiar with the process of engaging communities and ultimately initiating community based (village regulations/by laws).

Methodology

The methodology employed for the session is as follows:

- Equitable division of participants into working groups which are allocated specific simulation exercises;
- Simulation exercises are based on different subject or themes that fisheries legislative framework facilitates to achieve fisheries management objectives. For these exercise, the themes are: 1. General review/revision for strengthening the fisheries legislative framework to facilitate CBFM; and 2. initiating the by-law or regulation making process and identifying elements/content for village/community regulations/by-laws;
- Using technical background papers, presentations and other information made available to them at the workshop or their own resources, the groups will identify issues and considerations and prepare plans, strategies or presentations/briefs to initiate the legislative drafting process or identify main components of the type of legislation (principal fisheries law, regulations or by-law) to be initiated and the required components of these laws;
- Role playing: This requires the group or appointed representatives of the Group to present their findings and recommendations through interaction and role-playing rather than directly through a classroom approach (lecture/presentation);
- Review and finalisation of findings and recommendations in plenary.

REVIEW OF CURRENT FISHERIES LEGISLATION TO ENHANCE COMMUNITY BASED FISHERIES MANAGEMENT

Country: Oceania, Western Pacific Ocean and member of Forum, FFA, SPC and new member of FAO.

Setting: Oceania is a newly independent State. It has an extensive archipelago of 1000 islands scattered over large oceanic space. The islands are divided into 10 regions and are administered by the central government through Island Regional councils. The regions are actually divided along the principal clan groups who have their own paramount chiefs within each major clan group. The people of Oceania are largely of the same ethnic/language group and live in closely knit communities. Traditions and norms are largely respected but modern government, technologies and an introduced material way of life are threatening communal living. Travel to the capital for most islands is at least a 1 day boat-trip or 55 minutes by aircraft to the administrative centre only.

The Constitution of Oceania stipulates in its preamble (introductory and non enforceable provisions) that the natural resources shall be utilized in a sustainable manner for the benefit of all its peoples and that laws shall be passed to regulate resource use with due consideration to full involvement of the indigenous population. The Constitution also recognises the important role of island chiefs in the governance of Oceania. Under the Customs Recognition Act, customary law and traditional resource use practices shall be respected.

Oceania is a party to the principal fisheries Conventions and Agreements. It has made a commitment through its membership to FAO to implement the Code of Conduct for Responsible Fisheries.

The Ministry of Fisheries administers the Fisheries Act and provides that the Ministry is the principal fisheries management authority. The Ministry has only 20 technical officers with 5 officers assigned to two Island Regional Council areas each and are located in one of the island groups or visit the councils at least once a year. For the most part, the Island Councils govern the islands.

The Act provides that the Minister may make powers to regulate matters in the interest of sound fisheries management. The Minister has passed some regulations on coastal fisheries which can be found under the Fisheries Inshore Regulations which regulate mesh sizes of gillnets and fish fences as well as size limits on the fish that can be taken. The Act prohibits, inter alia, fishing without a licence, fishing contrary to conditions of a licence and taking undersized fish or taking fish with nets of mesh sizes below the prescribed minimum as offences. However, not many fisheries offences have been prosecuted so far.

Oceania has issued permits to locals who sell fish at the local markets. Some of the local businessmen with permits have had arguments which have in some instances led to fights regarding fishing around islands and reefs by local businessmen and city dwellers. Subsistence fishing is not controlled and recently, island communities have complained about fewer and smaller fish being caught. Now subsistence fishermen have to go further from their villages to fish. The councils claim that the areas being fished are traditional fishing areas. They have expressed the need for their traditional areas and rights to be recognised and that they control access to traditional fishing areas. Little enforcement has been done. The fact that the fisheries officers and other law enforcement officers do not lay criminal charges against local fishers and bring them to court or to pay a penalty is public knowledge and a standing joke that Government's written law is nothing but a paper tiger.

NGOs who are working with the Ministry of Lands and Environment (rather than with Ministry of Fisheries) and local villages to establish reserves as no-go areas for biodiversity protection which will close off areas to fishing and other development activities.

Objective: To convince the President and Council of Ministers (Cabinet) to issue a directive to amend fisheries legislation in order to introduce community based fisheries. To also identify main components for the proposed amended law and the nature or elements of the main provisions to facilitate establishment of CBFM and development of village regulations/by-laws and present arguments in favour of these components/provisions.

Activities

1. Review of legislation and preparation of arguments and a summary/presentation outlining issues and main components/provisions of required legislation. The following considerations, which can be extracted from the above setting, are relevant (but not exhaustive) for this activity:

- The need for implementation of international (e.g. FAO/UN instruments) or regional (e.g. FFA/SPC arrangements/ etc) principles, strategies, obligations or commitments if any;
- The implementation of national Constitution;
- Whether current legislation adequately provides for establishment or recognition of other groups or communities (stakeholders) to be involved in fisheries management at any level (consultative, advisory or management level);
- The adoption of good practice and useful global or regional trends;
- Whether management planning is a requirement under current legislation;
- Whether current legislation provides the basis for creation of specific fisheries management or protected areas;
- Whether current legislation provides adequate basis for exercise of MCS/enforcement powers by non government officers including village/community leaders, groups or entities.
- What should be the unit for the CBFM mechanism (e.g. villages, islands)? Will the extent of their jurisdiction be determined in the legislation or at a later stage?
- Will be the CBFM units be explicitly recognised in legislation or will they be established at a later stage by a designated authority?
- What will be the extent of the powers to be exercised by the CBFM units?
- Will several components of the CBFM be established and if they are, how will these components relate to other and operate?
- What will be the process for making regulations/by-laws? Who enforces the regulations/by-laws?

A consideration for preparation of proposal to establish the CBFM system through legislation and its presentation is to formulate the proposal in the form of a formal government agency or submission to cabinet (the executive arm of government). A table of dot points or list highlighting the main components of the CBFM system and an outline of main legislative provisions to implement such CBFM would suffice.

2. Meeting with the Minister for presentation of the proposal to establish the CBFM system through legislation and to present justification for the proposal, to provide clarifications to any questions or comments made and to outline the components of the CBFM system that will be expressed through legislative provisions and describe the nature of those legislative provisions. (Presentations can be in the form of a printed document, PowerPoint Presentation, overhead slides, charts, white board or other form that will best serve the Groups purpose

Summary of role-play

Participants were divided into three groups to role-play the development of legislative frameworks to facilitate CBFM. The role-play involved the preparation of policy and legislative submissions in the groups and then the presentation of these submissions in a mock situation where the theoretical national fisheries management authority attempts to persuade the Minister to endorse policy and legislation to support CBFM. The role playing was executed successfully by the groups. The participants showed a lot of enthusiasm and enjoyed playing their designated roles and were able to identify issues, develop familiarity with the process and be reminded of the importance of sound preparation in development of policy and legislation, involvement of stakeholders and technical advisors and making best use of local knowledge and protocol to achieve their objectives.

Session 14: Practical on fisheries legislations

Special session on US marine protected areas. Tom Allen

Pacific Islands Regional Coordination

- **Regional scheme**
- **Three Pacific sites**
- **Budget**
- **Partnerships**
- **Vision: Unified constituency: geographically, politically and culturally unique. To assist each site with coordinated programs and projects and to expand mission to other insular Pacific islands and nations.**



Existing Locations
Proposed

Scale varies in this perspective.
Adapted from National Geographic News

(PowerPoint presentation – no written paper)

Discussion

National marine Sanctuaries are authorised by the national Marine Sanctuaries Act and there are 13 designated sites. A regional scheme covers three Pacific sites. There is a lot of expertise in the programme and partnerships are regarded as very important. AGIS, Maritime geology and other projects are included in this work. Working on shipwrecks is a component of the preservation of historical sites. Heritage resources are also included in this work. A recent project called SPLASH includes tracking and monitoring humphead whales in the region. GIS mapping is used for data collection and overlay data layers used when recording - thus it is possible to specific areas of high use by fishers and other resource rich areas.

Steve Beverly asked what additional advantage the whales get out of this further protection, as so much has already been done. Allen Tom said that this is to bring out more awareness and education on whales - mainly education and research on the humphead whales.

Niue asked if this would assist in the management of longline fishing. Allen Tom said that information could help with management decisions. Samoa asked why there was a move to reintroduce Hawaii fish ponds. The response was that these will be used mainly as an educational tool.

Session 14: Legislation in the US Western Pacific

Charles Ka'ai'ai

Western Pacific Regional Fishery Management Council



- The Magnuson Stevens Fishery Conservation and Management Act of 1976 created eight quasi-federal Regional Fishery Management Councils.
- WPRFMC granted authority and responsibility for the conservation and management of fisheries in the Exclusive Economic Zone of the US Pacific Insular areas - American Samoa, Commonwealth of Northern Mariana Islands, Guam, Hawaii and the US Pacific Remote Island Area.
- 13 voting members – 8 appointed by the Secretary of Commerce to represent commercial, recreational and subsistence fishing interests, at least one each from Hawaii, CNMI, Guam and American Samoa. The rest is made up of representatives of the communities and governments of the US Insular area.

01/04/05 2

(PowerPoint presentation – no paper available)

Discussion

Charles Ka'ai'ai said that, in Hawaii, communities are under three different governments and numerous jurisdictions that vie for authority in the management of their natural resources. The US government, the State of Hawaii and county governments. Numerous agencies have authority and jurisdiction over natural resources. The State is constitutionally and statutorily responsible to ensure the well-being of native Hawaiians. They have not fully exercised that authority. The courts have repeatedly found that the resolution to native claims must first be legislative. Native Hawaiians have used Congress, the State Legislature and counties to develop legislation to support native access and preference rights and have used the courts to force recognition of traditional, cultural practices and access. So, while there is a need for enabling legislation with the proper authority to establish the legal basis for community-based management of fisheries, the Hawaii experience has shown that even with the proper legal bases there needs to be the will to implement by the governments and accountability for actions.

Because of the statutory and constitutional requirements to benefit native Hawaiians, Hawaiian culture wields a strong influence in Hawaii and the US, but the results are often less than satisfactory. Native Hawaiians and others have been denied recognition of nationhood. The ability to guide their own future has been subsumed by the US need for this Pacific outpost. Prior Native preference rights are often rejected in favor of the doctrine of equal rights.

Palau commented that it was interesting to see the case of Hawaii in that you have to deal with both the Head of State and the US in your management work.

Session 14: Practical on fisheries legislation

Blaise Kuemlangan, Martin Tsamenyi, Manu Tupou

ESTABLISHING COMMUNITY BY LAWS OR REGULATIONS

Country: *Same as previous exercise.*

Setting: *Same as previous exercise except that there is now the legal basis for community based fisheries management.*

Objective: To promulgate village by laws/regulations or review the proposed by laws/regulations and ensure the endorsement of those regulations by relevant government authorities e.g. the Fisheries Ministry, Attorney General's Ministry.

Activities: Identify and develop basic provisions (in bullet points) to be adopted as by village-by laws/regulations. Relevant considerations for this activity are:

- The provisions relating to CMFM under the Fisheries Act and other legislation;
- The jurisdiction of CBFM units (villages and communities);
- The implementation of village management plans through village regulations;
- Information provided during the workshop.

Exercises: Legal exercises

Participants divide up into groups and do discussions on how to input amendments to legislations to include CBFM. This exercises included looking at a sample country with about 1,000 islands within 10n regions. There is an existing Fisheries Act which does not take account of community management and the task was to try and develop arguments and role play what it is like to present and argue a case for amendment of existing legislation with a Minister in a country. The exercise took one and half hours and at the end participants had to choose a Director of Fisheries, advisers, legal adviser to role play the discussion process. The role plays were enjoyable and entertaining and had people thinking of what the processes were and what was involved in trying to amend legislation. Understanding of problems and the importance of data and brain storming and compiling information for presentation. Ministers have limited time and presentations have to be convincing backed up with data. Three groups used different modes of argument and each highlighted different areas of concern, ways to tackle them and proposals that can be used when trying to convince people in high decision making, in this case the Minister.

Discussion following the exercises

The use of consultants when trying to enact legislations is acceptable but the consultant should not be arguing for the Fisheries Department; the Director should be doing it himself with perhaps the consult present. It is important that the Director is in control, and that it does not appear that the Director is not too sure about was going on. It is important to be well-prepared for such an audience

Session 15

Involving fishers and other stakeholders in fisheries management

Michael King

A stakeholder is a person, or a group, with an interest or concern in something. In addition to the government, which should look after broad community interests, there are many stakeholders in fisheries. In commercial fisheries, key stakeholders include fishers, boat builders, processors, and the public. In subsistence fisheries, key stakeholders include fishers, fish-sellers, the community, and community leaders. The wider public also has an interest in the protection of the marine environment.

In involving stakeholders in fisheries management, a continuum of possibilities exists ranging from full and sole control by the government and its agencies to full control by fishing communities. For various reasons, somewhere between these extremes (co-management) is desirable.

Total control by government (agency)	Control by government with some input from stakeholders	Equal control by stakeholders and government agency	Control by stakeholders with some input from government	Total control by stakeholders
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The main reasons for the involvement of stakeholders is that co-management ...

- a) Broadens expertise available for management
- b) Promotes ownership of management plans
- c) Promotes compliance with rules & regulations (*and a reduction in enforcement costs*)

Involving stakeholders in fisheries management can be accomplished in several ways involving public meetings and consultation. More formal arrangements include the setting up of Management Advisory Committees (MACs) in commercial fisheries, and Community-based Fisheries Management (CBFM) in subsistence fisheries.

Various degrees of stakeholder involvement are possible. In commercial fisheries, are MAC meetings chaired by industry or commercial representatives? In the community-based management of subsistence fisheries, does this mean management by community leaders (as in the Raui system in Cooks) or management by the broader community (eg by elected committees)? A later presentation will address CBFM in some detail.

Session 16 - including 18 (problem/solution tree)

Community-based fisheries management

Michael King

There are several models for community-based fisheries management (CBFM). The model described here is one developed for Samoa; this model is one that can be easily transported (with cultural modification) to other countries and is detailed in the SPC book "*Fisheries Management by Communities; a manual on promoting the management of subsistence fisheries by Pacific Island communities*" and the paper "*Community-based management of subsistence fisheries in Samoa*" (King & Fa'asili, Fisheries Management and Ecology, 1999). Before embarking on CBFM there are a number of questions to be answered.

- **Is government willing to empower communities?**

Governments and agencies are sometimes reluctant to relinquish power and hand control over fisheries to fishing communities.

- **Are communities willing to act?**

Many communities rely heavily on assistance and expect the government to take actions to protect fish stocks.

- **Do communities have control over their waters?**

Are the fishing areas open access? Is CMT involved? Communities must have some control over their fishing areas in order to manage them (note "special management areas" in Tonga)

The overall extension strategy in Samoa was to seek a community-developed Fisheries Management Plan from each village participating in the extension programme. Each participating village was encouraged to analyse its fishing practices and develop a community-owned plan with undertakings to introduce appropriate regulations and pursue other conservation measures. The project strategy was based on the following four principles:

a) Maximum community participation

Regardless of legislation or enforcement, the responsible management of marine resources will only be achieved when fishing communities themselves see it as their responsibility. Accordingly, the strategy focused on mobilising each community through direct contact with key village groups. These included women's groups and untitled men's groups to ensure the widest community participation and eventual ownership of the village fisheries management plan.

b) Motivation not education

The knowledge of island and coastal people regarding the marine environment has often been underestimated. Most coastal communities have an awareness of, and concern for, their marine environment. Although public awareness-raising activities were part of the fisheries extension programme, the prime need is not for education, but for motivation and support. The key task was to convince communities that they, not the government, have the primary responsibility to manage their marine environment.

c) Extension system which is demand-based

For reasons of efficiency and sustainability, the extension system focused on villages in which communities had a concern for the marine environment and were prepared to take action in finding solutions to problems. This required selectively working with villages which were eager to participate in the programme.

d) Development of alternative sources of seafood

It is unreasonable to expect communities to adopt conservation measures, which will (at least in the short term) reduce present catches of seafood even further, without offering alternatives. Accordingly, the extension programme included: 1) the diversion of fishing pressure to areas immediately beyond the reefs through the introduction of medium-sized, low-cost boats; 2) the promotion of village-level aquaculture; and 3) the restocking of depleted species.

The fisheries extension process

Preparation for the fisheries extension programme consisted of designing a culturally-appropriate extension process and training extension staff to facilitate the process effectively. Training for extension personnel was based on the requirement for a balanced understanding of both basic scientific knowledge and community motivating/mobilising techniques. Community-related training provided skills in encouraging unobtrusively communities to discuss their problems and propose their own solutions.

The developed extension process involved recognising the village *fono* (or council) and chiefs as the prime instigators of change, while still allowing ample opportunities for other community groups to participate. The process from initial contact with the village to the final production and overseeing of a Village Fisheries Management Plan is summarised and described below.



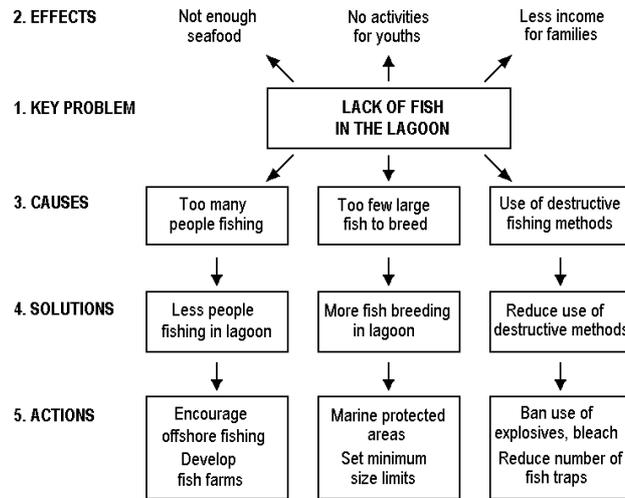
1) Initial contact and the village council (fono) first meeting

In the early stages of the programme, villages were first contacted by a Village Extension Facilitator (VEF). Later, this became less necessary as village leaders approached the Fisheries Division to express interest in the programme. Following an initial expression of interest, a meeting was arranged with the village *fono* (council), at which the community was provided with information to allow them to either accept or refuse the extension programme. If the *fono* decided to accept the process, it was then asked to arrange for separate meetings of several village groups, including women and untitled men.

2) Village Group Meetings

The village was responsible for assembling various village groups for separate discussions; this separation was necessary to allow particular sectors of the community to express opinions which they otherwise may not do in large groups dominated by titled people. The groups, including women (*faletua ma tausī, aualuma*), untitled men (*aumaga*), fishers and titled men (*matai*), held meetings to analyse the condition of their marine environment and fish stocks. After this, each group decided on key problems, determined causes, proposed solutions, and planned remedial actions. These were written (as a problem/solution tree) on a portable white board by a trained facilitator (see Figure below).

At a second meeting, the groups continued to examine the most practical solutions to the problems in greater detail. Finally a village Fisheries Management Advisory Committee (FMAC) was formed with three people nominated from each group.



3) The Fisheries Management Advisory Committee (FMAC)

The FMAC held a series of meetings to further consider the problems and solutions identified by each group, and combined these into a single problem/solution tree. The committee then decided how the solutions could be made to work, which actions were required from the village community and what type of support was required from the Fisheries Division. At the FMAC meetings, members (assisted by Extension Officers) prepared a draft Village Fisheries Management Plan for discussion and approval by the village council. The final draft of this plan was completed by members of the FMAC at the Fisheries Division, where scientific staff were available to provide additional technical information on demand.

4) The Village Fisheries Management Plan and final fono meeting

The community-owned Village Fisheries Management Plan is in the form of an agreement between the village and the government in that it lists the resource management and conservation undertakings of the community, and the servicing and technical support undertakings required from the Fisheries Division. The plan was presented to the *fono* by the FMAC, in the presence of Senior Fisheries staff (to signify the meeting's importance). If the plan was accepted by the *fono*, it then appointed a Fisheries Management Committee to oversee the working of the plan.

5) The Fisheries Management Committee (FMC)

The FMC was appointed by the *fono* to administer the undertakings of the village. In most cases, members of the FMAC were appointed to the FMC. Once the Village Fisheries Management Plan was formally agreed, the Fisheries Division maintained regular contact with the FMC and provided the technical support agreed to under the plan.

An exercise was conducted based on the problem/solution tree used in the Samoa model. Participants addressed a hypothetical non-fisheries problem ***“We all live in a village where there is no school for our children (the nearest school is in a village 15 km away)”*** Participants brainstormed causes, effects, and solutions.

Discussion

Cook Islands asked about areas where there is no tenure. If it does not exist, or if the traditional authority is not recognised, then there has to be some legal work first to ensure that it works. There is a dual process in place - there has to be some sort of compromise or working together.

Tonga said that CBFM in Tonga was difficult to establish even though it may look good on paper. The problem is that inland communities also have to have access to the sea. In giving management power to coastal communities, inland villages cannot be deprived of access.

Blaise said that the definition of communities has to be clear and transparent. Tonga's case is difficult because there are no defined community boundaries – the task is to discover what unit can be used as a community.

Session 17

Traditional practices and regulations

Paul Bartram

Paul Bartram discussed the work in a Hawaiian community. Started off as part of the Hawaii government work, but the community now does its own management. Paul Bartram described how traditional knowledge methods, times and places of fishing are compatible with the process of biological renewal.

The Hawaiian Moon Calender was discussed and how it influenced fishing activities. There is high reliance on seaweed, and when there is change in seaweed composition - the low tide during the wet season is at night, and during the dry season is in the day. The spawning calendar was also discussed in detail. Because of traditional complexities and diversities the community could not work with the state of Hawaii.

Session 19

Different models of CBFM practised in the Pacific Islands

Session 19: CBFM in Samoa.

Talavou Taua



(power point presentation – no paper available)

Discussion

Tala discussed the Samoan model of community-based management. He described the process, the legislative requirements, inputs from both the village and from the government, and the problems faced. Marshalls pointed out the need to include non-fisheries issues such as the problems of transshipment in CBFM plans in areas which are urban. Tonga asked how commercial interests were taken into account. Tala replied that this was not a problem in Samoa.

Kiribati asked about the major recurring problems and what solutions were offered. Tala said that problems included the process in the villages being delayed due to village disputes. Etuati added that there were problems when some other organisation (IUCN) were working in the same area. Steve Why said that problems faced by other countries, such as transshipments, have to be dealt with. Fiafia said that communities are going to have to face the fishing-related problems (including transshipments and AIDs) and actions to prevent this could be included in by-laws. There is a need to look at related issues and not to be confined to just fisheries issues.

In reply to a question on start-up costs, Tala said that starting costs were high due to the additional extension staff taken on and the need to provide cars for transport.

Session 19: CBFM in Hawaii

Paul Bartram

Paul Bartram described a Hawaiian example involving communities and also host communities that have projects which everyone else contributes. In answer to a question on the availability of funding to help with work in other villages, Paul said that there was no funding available from the government.

Blaise commented that the Hawaiian community fisheries management case was an example of addressing sustainable livelihoods issues. As in other parts of the world, we have to see community-based management as part of the effort of sustaining livelihoods of people. Management, in particular community based management has to be designed in a broader sense rather than just for the sake of conservation.

In answer to a question on whether closures and moving to other areas was still practised, Paul said this is not included in regulations but has been practised traditionally.

Mike King asked about the wider problems that communities had, like environmental and socio-economic issues and how these could be addressed.

Blaise asked about the value of the subsistence fisheries, and given that the US has financial resources compared to other countries in the Pacific, why was it so important to have CBFM in subsistence fisheries. Paul said that about 30% of people are still dependent on the subsistence fishery.

Session 19: Community experiences in Coastal fisheries management work in Pacific Island countries

Aliti Vunisea

Introduction:

Management have been practised in many forms in Pacific island societies for generations. With change in resource use patterns and resource use dynamics, development of the fisheries sector has in most cases surpassed existing legislations and policies in countries. People are sometimes caught in new and emerging issues relating to new fisheries and new commercial arrangements which they know little about, thus the need for appropriate and effective legislation, to assist them in making decisions. Traditional systems of management worked well in traditional situations and environments and have some degree of success within modern resource use systems but the fact remain that traditional institutions and the beliefs and rituals that go with it are in most cases starting to erode and in some cases lost. Institutions that influenced or dictated traditional resource use are beginning to be questioned by people, and the practicalities of some of these traditional norms have begun to be questioned by the people in communities themselves. Contributing to these is the loss of knowledge and close ties to traditional use of resources that people used to have. These losses in knowledge have usually been linked to increased rural urban migration, technological advance in education and work and the increasing dependence and familiarity with technology and the decreasing use of traditional technologies and knowledge. The current emphasis on community-based marine resource management has brought out the need to better understand communities and the different social and cultural dynamics that we are faced with when undertaking management projects.

Work of the coastal fisheries management section:

Our work as stated earlier is guided by the strategies to coastal fisheries management that was agreed to by the Heads of Fisheries in 2003. The strategies outline ways of dealing with identified problems and issues that countries had identified. The challenge has been how to address these issues differently in the diverse cultural and social structures that we have in Pacific island countries. We had been using the “Samoa approach to management and in most cases have modified models used to suit the different cultural and social contexts. The Pacific is such that, there can be no “one shoe fits all” approach. We have to look outside the models and boxes of approaches that have been used successfully in countries of the region and take lessons learnt when implementing new initiatives. Lessons learnt from other initiative and approaches are invaluable in trying to implement management in the various countries. The differences that exist cannot be undermined, thus implementation, monitoring and valuation of success and failures will differ. Some of the aspects and basic model and approach used can be standardised, but the differences will require systematic assessments using various methods and approaches. The role played by the Fisheries agencies as counterparts to SPC’s programme therefore becomes very important. National fisheries officers are familiar with local situations, traditional institutions and norms and the social dynamics of a country thus a in a better position to guide the drawing up approaches and model to be used.

Dealing with people in communities

People in communities live and work within various institutions and modes of governance. In countries like Fiji, Vanuatu, Tuvalu, Solomons, etc there are dual cases of legislation and regulatory measures that people have to adhere to. For example ownership and fishing rights exist both traditionally and officially legislated and both systems are recognized by government. Thus there are cases where there is confusion of fishing rights and traditional access to marine resources through an overlap in jurisdiction and influence over certain areas and fisheries. Both sets of regulations are used by the people in communities, thus there is a need to acknowledge that work that will be done depends on finding a balance between the two.

Examples:

In Niue traditional fishing rights areas are well known and are still observed by communities. The Village Council which is the administrative authority that looks after and deals with resource use and management in communities, has, under the Village ordinance Act rules and regulations for communities and this includes resource use mechanisms.. On the other hand all water up to the high water mark (as in most other countries of the region) belongs to the state. In addition to this, use of marine resources which is guided by both authorities, is further complicated by the kin system where kin relationship, marrying into a family or friendships are avenues which allow for fishing access. National regulations in existence do not clearly define these overlaps. In Niue for example, management work at the community level had to take account of traditional use rights arrangements and how access and infringements can be enforced within a small population and within very closely linked communities. People had access to almost all fishing areas under traditional arrangements, thus by-laws can be developed but the observance and practicalities of enforcing such a system has to be tested.

In the case of Fiji people's jurisdiction over fishing areas or customary marine tenure (CMT) is recognized under the Fisheries Act. The Fisheries Department therefore has to work within both sets of regulations (traditional and officially legislated regulations) in fisheries development and management. At times Customary marine tenure and state jurisdiction existing over the same areas are a cause of conflict and confusion to people. For Fiji coastal fisheries management work in the 8 years have been spearheaded by NGOs and now supported by FLLMA a network of practitioners from the government, NGOs, institutions and other organisations and individuals. Because of the state of resource ownership and marine access, the group of practitioners which includes government officials, Fijian administration, NGOs, academics and researchers work together on management at the community level. People are highly dependent on fisheries resources for subsistence and economic livelihoods and with limited employment opportunities both in the private and government sector the informal sector has thrived significantly on fisheries resources. Working with communities is further complicated by leadership roles changing, rural urban migration and the erosion of traditional structures and support systems for people. As in the case of Fiji, each province and even district has to be dealt with on a case by case basis with people's rate of progress and willingness to participate determining management progress. With the move to revert ownership to the traditional owners, it means more power and influence on resource use and management by the local communities. This will again have its challenges in what people see as their priorities and needs as opposed to the need to conserve for far future.

In Tokelau the Taupulega has supreme authority over resource use and decision making for the community at the island level. They decide which management initiatives are put in place. With self-governance coming up, the transition will not pose a lot of problem as the jurisdiction and use (development and management) have always rested with the Falekaupule. Similar to the case of Samoa, the strong traditional link that exist still have stronghold on the people and their activities. The challenge in the near future is the willing ness of people to maintain the equilibrium and continue to support and follow regulations without question when the country gained their independence. As of now AID from new Zealand allow people to do community work and be paid for all the work they do so people are content to do such work and there is no motivation to change the current set up. A change in leadership in government and the need for self-sufficiency may see changes to the system.

In Vanuatu, the traditional fishing rights are similar to that in other countries. The provincial Authority which oversees the interests of the communities, do not have the complete legal authority to decide on access agreements and management at the village level. The system in Vanuatu is more complex because of the various levels of ownership and influence at the community level, for within the community there are many more reef owners' rights holder and these can be more than 10 in a village. In these cases then the provincial authority and the Fisheries Department have to rely on the different reef owners grouping to allow access and consent for work to be done. Thus the Fisheries Department has set up a Fishermen Association to try and get in all fishermen to work together on common

interests. The case of Vanuatu also depicts the complexities that exist when working with communities in larger countries of the Pacific. Social and cultural dynamics are very different. And in these cases as in the case of other Melanesian countries, differences are defined even at the village and district levels.

Tuvalu has traditional rights and national legislation. Where national interest may supersede that of local needs and aspirations. In the island people are still traditionally organised with strong leadership in place. The Falekaupule Act also further supports the traditional leadership structures in place. The challenge in this case may arise from people's economic needs as opposed to the need for sustainable development. Money through new trade is lucrative thus people without proper employment have to survive and will look at any option to gain monetary needs. The involvement of people in projects will be easy given the strong traditional set up still in place.

Feed back from on-going work in American Samoa fisheries where community-based management have been implemented, the challenges are again different. In this case for example most people have paid employment and thus do not have much time to be engaged in the community work or be part of the committees set up. The question of monetary compensation then begins to be the challenge. In the Marshall islands the challenge was in land owners agreeing to what the Chiefs and the town mayor had agreed to. The leaders in this case supported the project but the landowners were not too keen on being involved in the project.

In the different countries of the Pacific societal structures and leadership structures are different, thus the need for a box of approaches to use rather than a single model which may not work in many contexts.

Trends in Management Initiatives:

Working with other organisations, NGOs, Government agencies.

Because SPC works through the Fisheries Agencies of the different countries training has focussed on fisheries officers. In small countries such as Niue, Tokelau, Tuvalu, Nauru, etc this will mean that officers trained have to be well versed with dealing with communities and have to facilitate work relationships with NGOs and other government departments to enable work in communities to be done. Country level engagements with communities are at the discretion of the Fisheries Department who we work through. In most cases, NGOs and other organisations are well placed in terms of human and resource capacity to work in communities. In other cases these organisations have built rapport and working relations with communities which the Fisheries Department can tap into to support the work on management to be done. Other government agencies have their own areas of work and interest and working closely with them will mean that half the work that fisheries officers have to do can be done by them. This is in cases where tourism, alternative generation activities, etc are offered as alternative means of income and livelihood sources.

In most countries there already exist some form of management initiated through partnerships or collaboration with NGOs, environmental organisations and other government agencies. It is useful to work with such existing initiatives to have more significant impact in the country and on the people.

Communities are more aware and educated

In management work we are dealing with communities that are more aware of fisheries issues. There will be conflicts in certain areas of interest, thus there is the need to work within traditional institutions and accepted protocols. It will be useful that for future work to be undertaken in countries that Fisheries agencies fully inform SPC staff of institutions and protocols in place.

Increased involvement of women

Women are increasingly involved in management work, and through work in countries women are included in national workshops and training and discussions at the community level. The challenge is to have women play more active roles in the running of projects that are being implemented.

Economic needs versus the need for management.

The trend for commercial exploitation of resources will not decrease given the need for employment and monetary needs of people in rural communities. The challenge will be in trying to reach a balance with communities where they are able to meet their subsistence and economic needs and at the same time are able to use resources sustainably. It is a difficult argument when you have full time employment and try to convince people to forgo what could in reality be the only source of economic livelihood for the sake of conservation.

Increased recognition of traditional user rights to resources

Most of the countries in the region recognize customary marine tenure. Traditional administration are in many cases well organised and have a lot of influence over decision making relating to resource use in communities. In some countries like Fiji and Tokelau there will be a stronger move to legislating traditional ownership and jurisdiction. The trend will mean that those who have ownership and jurisdiction over fishing areas will have increased influence and authority. The challenge in this case will be the degree of awareness of people in communities to make informed decisions relating to management.

Information need to support management work.

Fisher people in communities usually think and work according to traditional knowledge, experiences and everyday fishing experiences. Even though there is widespread use of improved technology, people still rely on the knowledge of tides, winds, moons and seasonal occurrences of certain species. Specific scientific information and data to support management work is usually lacking. Thus it is becoming more important that people are made aware of scientific knowledge that can assist in management. Research and surveys to assist in proper management work is vital not only in the provision of baseline information and stock assessment but in determining causes of resources depletion, and information collected can assist in monitoring and evaluation of projects.

Changes in communities

Changes to community structural set us, new developments taking place and urgent and emerging issues have to be taken into account when implementing Community-based management. Rural-urban migration and leaders living away from villages is a common trend in the larger islands of the Pacific. In other instances land owners and fishing rights owners no longer live in their villages thus developing or full control of management could be difficult when some of the key people are not in residence.

Challenges

Some of the challenges include:

- Working within traditional rules and national legislations and in overlapping areas of jurisdiction. This may at times bring to the fore national and community interests and how these can be compromised.
- There are many partners in management and with the trend to work with other organisations, NGOs and government agencies the challenge will be in the community's capabilities to continue after partners have left. The challenge is in capacity building to ensure the long-term continuity of projects implemented.
- Making sure that all sectors of a community are practically involved at all levels of work and decision making. Women can be very useful managers thus the challenge to involve them at the decision making level.
- When implementing management the need to be sensitive to sources of livelihoods and the struggle by people in communities to make a living. That conservation does not overtake emphasis on people's welfare.
- The need to reach a balance in commercial pursuits and management measures to be put in place require the sourcing out of alternative sources of food and income.

- The changes to community set ups and leadership structures coupled with increasing recognition of traditional ownership rights in some countries call for more and stringent education and awareness work in communities.
- Management will only be successful with necessary scientific and other necessary information available to the people in communities.

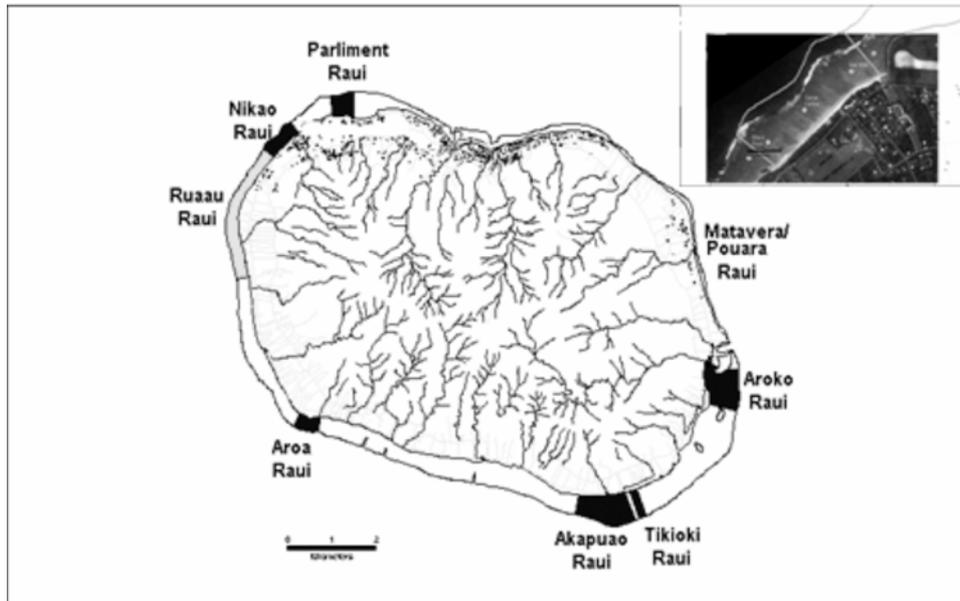
Discussion

The Marshalls asked about the legal framework for management in Fiji, and Aliti said that this was allowed for in the constitution, one of the oldest systems in place.

Session 19: The Cook Islands system of *raui*

James Teokotai (Tango) Herman

RAROTONGA RA'UI



(powerpoint presentation – no written paper)

Discussion

The definition of *raui* was discussed. Rarotonga had 6 *raui* in 1996. Rarotonga has different traditions when compared to Aitutaki, which has 4 sites and covers 16 % of the lagoons – these can be permanent or temporary. A *raui* is put in place by the island council with the authority of the chiefs. The Ministry of Marine Resources advises the council, sharing costs between the council and the Marine Resources Authority. *Raui* involves community work in which everyone comes in and does work on marking the *raui*. Problems include enforcement and the lack of clarity in legal responsibilities. Steve Why made the point that in order to increase fish populations, areas should be permanently closed.

In the trochus fishery, even though there is open access, there are limits and quotas and seasonal periods for fishing. A quota system is in place and the total allowable catch is divided into equal amounts for everyone in the communities. And these can be transferred between people. Over the years there has been an agreement between the buyer and sellers thus it is in their interest to collect trochus that are of legal size. In the last 4-5 years, council has been selling trochus by to other countries including Spain and Italy.

If people are found fishing in reserves, they were reported by observers using mobile phones and their names were broadcast over the radio. The punishment was to lose your status as an adult, and be treated as a child by being ignored.

Session 20

Alternative fishing methods and sources of seafood

Michael King

Whether community-based or not, ***most fisheries conservation measures, including the prevention of destructive fishing and the imposition of fish size limits, will cause a short-term decrease in catches.*** The same is so for the setting up of marine protected areas as they reduce the area available for fishing.

As most subsistence fishers require seafood for their families on a daily basis, it is unreasonable to expect fishing communities to adopt conservation measures which will initially reduce present catches of seafood even further without offering alternatives. Accordingly, an extension programme should include the promotion and development of alternative sources of seafood to those resulting from the present heavy and destructive exploitation of near-shore reefs and lagoons.

A community-based fisheries management programme that does not provide support by way of promoting alternative means of obtaining seafood is unlikely to be sustainable.

So, what can be done to allow communities to have continued access to seafood? Fishing on different species to divert fishing effort from over-exploited target species? Or fishing in new areas to divert fishing effort from over-exploited areas?

Unfortunately the options are limited. No “new” target species are likely to be discovered (a tropical version of the Patagonian toothfish is unlikely to be found!). Stock enhancement (the addition of young to the sea) has limited application, although this is being successfully done in some cases (eg clams, beche-de-mer). Aquaculture, at least at the village level, has had a long history of failures in the Pacific. Fishing beyond the reefs has the attraction of diverting fishing effort away from overexploited lagoons. Although expensive to install, fish aggregating devices (FADs) have allowed communities to fish on pelagic stocks that may be larger and more resilient.

Session 20: FADs and Coastal Fisheries Management

Steve Beverly

Fish aggregation devices (FADs) can be used as tools in coastal fisheries management programs. Their main role is to offer an alternative fishing method to replace unsustainable or destructive fishing methods. In the evolution of SPC coastal fisheries development programs lagoon fishing was replaced by deep slope bottom fishing – which was then replaced by deep slope bottom fishing – which was then replaced by FAD fishing and small to medium-scale longline fishing. Of these, FAD fishing has been the most sustainable.

FADs can be used as alternatives to gill netting, over-fishing in the lagoons, dynamite fishing, and cyanide fishing. Other benefits of FAD programs include cost savings to the fishermen (less fuel) and increased safety. FAD programs can also be used as focal points of management plans, and FADs can possibly be used as demarcations for MPAs.

A three-year FAD program, funded by New Zealand's Pacific Initiative for the Environment, or PIE, fund has recently been completed in Niue and Cook Islands. It was carried out by SPC and Niue and Cook Island fisheries departments. Fifteen FADs were deployed, household surveys were conducted, and a catch-effort logbook was introduced. One goal of the program was to develop a low cost FAD design that would allow the program to be cost effective. The FAD program was cost effective in terms of materials cost and catch, as revenue from catch was greater than materials cost.

Other examples included a steel spar buoy FAD deployed off Port Moresby in PNG in 1992, and New Caledonia's FAD program. The PNG FAD lasted three years and, based on initial data, could have generated PNG K250,000 in revenue over its lifespan. The FAD was deployed to take pressure away from lagoon fishing. New Caledonia has developed an alternate design using 300 m of 8 mm stainless steel cable for the upper mooring and 16 mm three-strand polypropylene for the lower mooring. The buoy system is an Indian Ocean design using alternating hard and soft floats. The FADs are more expensive at USD\$5500 each, but have a longer lifespan. Several have survived more than two years.

Little has been written about the use of FADs as management tools. An exception is a report on The Nature Conservancy's Komodo National Park FAD program that was implemented in Indonesia. An expert consultant was hired to study the needs and to develop a comprehensive FAD program. The main goal of the project was to offer an alternative to destructive fishing methods – dynamite and cyanide – that were rapidly degrading the park. The program, which included all stakeholders, included training in FAD rigging and deployment, FAD fishing techniques, fish handling, and marketing. Over 300 fishermen were trained. One component of the project was that fishermen shared the costs of the FADs. One fishing group was generating revenues of \$USD240/month per boat with a crew of three. Their individual income was well above the poverty level of \$1/day.

Discussion

Discussions were how FADs can be used to divert fishing pressure away from the reef. Steve discussed several different types of FADs as well as the costs and benefits. He discussed several country projects on FADs.

Session 21

The structure of fisheries agencies

Michael King

Necessity has caused many fisheries agencies to address issues of conservation and sustainability. This shift in aims means that agencies may have to re-examine their organization structures and the skills of their staff. An SPC/ComSec project is underway to address this issue by addressing three key points.

1. Organizational structure

Is the present structure of the agency optimal to achieve its goals?
Can the fisheries agency be re-organized to be more effective?

2. Work plans to achieve overall goals

What activities are required to achieve the various outputs? How can this work be organized?

3. Training needs analysis

Do staff members have the skills to carry out the required activities?

The first step in the project is to re-examine the mission statement of the agency and work in an interactive way with staff to define objectives, targets and activities to achieve goals. This is suggested in the following sequence.

- 1) **Mission statement**
What is the purpose of the Fisheries Agency?
eg *“To manage fisheries on a sustainable basis for the benefit of all citizens”*
- 2) **Objectives**
How can this be translated into more specific objectives?
eg, *“To assist fishing communities to manage their fisheries resources”*
- 3) **Outputs or targets**
What targets or specific outputs can be set for each Objective?
eg *“At least 5 communities with fisheries management plans.”*
- 4) **Activities**
What particular activities are required to achieve the various outputs?
eg *“Meet with village leaders in 8 villages”*

Reviewing the organizational structure, skills and training needs of an agency is time consuming (about 3 weeks is required) and is disruptive (all staff need to be involved). However, the benefits are

...

- Goals and targets are clearly stated
- Greater efficiency (key issues are identified)
- All staff gain a greater sense of purpose (an ability to see the “big picture”)
- Additional skills required by staff are identified
- Annual plans and budgets become relatively straight-forward to produce.

Discussion

Solomon Islands expressed concern that HRD work planned in that country is the responsibility of national authorities such as the Public Service Commission. An HRD review was not the work of the fisheries department but was the responsibility of a higher level of authority including the cabinet.

D. Closing addresses

Certificates were presented by Charles Ka'ai'ai and participants were congratulated by Kitty Simonds, Executive Director of the hosting organization, WPRFMC and Ueta Fa'asili, the workshop coordinator.

Closing remarks by the Workshop Coordinator

The Workshop Coordinator provided the closing remarks. He stated that during the week of extensive work, participants went through many topics that were important for management of coastal fisheries. Discussions on many related issues under the agenda no doubt had helped to broader knowledge of many participants in many aspects of fisheries management. The workshop was to address fisheries legislation and community-based fisheries management. The drive behind the workshop was to see how legislation in various forms can be used as a tool by local communities and other stakeholders to manage their fisheries resources, particularly the use of fisheries regulations and community bylaws. In other words the workshop was trying to find ways to empower local communities to take responsibilities for management of their inshore fisheries resources. In doing so, experts have made presentations on various related projects that they have been working with. In addition, there were presentations from various countries on their respective developments in terms of managing their fisheries resources. And the countries have had a good exchange and share of experiences over the five days of the workshop. Some sessions were very extensive and took long hours. However, long sessions especially the practical exercises was not a problem because everyone was enjoying it

The Coordinator said that his approach to conducting the workshop was to be as informal as he could and to allow more times in discussions and practical exercises. That would allow participants to relax and speak more freely. The Coordinator felt that everyone has learned something from the workshop although some learned more than the others.

At the end, the Coordinator acknowledged the contributions of the sponsoring agencies – WPRFMC, FAO ComSec and SPC. He also acknowledged the contribution of country participants themselves, the resources people and the consultants. He also thanked the staff of the Council, FAO, and SPC, as well as the staff of the Pacific Rim Concept that made internal arrangements for the workshop.

Closing remarks by Kitty M. Simonds, Executive Director

Aloha Awakea,

Congratulations to all of you, I know that you have all worked very hard this week on achieving the goals and objectives of this first Western Fishery Management Council, Secretariat of the Pacific Community, Food and Agriculture Organization co-sponsored workshop. We hope to continue our regional and international cooperation in fisheries management and other community issues. We have learned from each other about how different nations and territories manage their resource in their communities and some history about their areas. We shared our strategies that we use in our own communities and we can take home lessons learned by others and apply them to our own community. We learned about the differences in laws, legislation, and politics in each of our island areas as well as the similarities. We also learned that we need to develop legislation that will enable our communities to manage their resources as well as the kinds of partnerships with governments and agencies to support community-based resource management.

We in Hawaii are proud to have you as our guests and hope that we will be able to host you again in the future to continue the dialogue begun here at the workshop, and that we continue with the important contacts made here.

There were four recommendations that have come out of this workshop. You have asked that:

- training on the use of the SPC socio-economic manual be conducted at the earliest opportunity,
- training to enable countries to develop their own fisheries management plans should be conducted as soon as possible,
- a regional approach be taken in resolving problems faced by countries in the management of their live food fish industries, and
- because of differences in cultures, customs and traditions, workshops should be sub-regional in order to resolve difficulties encountered in the development of community-based fisheries management.

The Council has great expertise in the development of Fishery Management Plans. I offer you the expertise of the Council and staff to assist you in the development of your fishery management plans.

Until we meet again, *aloha, me ke aloha pumehana, me ke aloha oia i`o.*

The end of the workshop was marked by a prayer offered by Mose Pelasio of Tokelau.

E. Assessment, outcomes and recommendations

1. Assessment of the workshop

Assessments of the workshop and its topics were obtained from the reactions and expressed opinions of the participants. In order to obtain a more formal and quantitative assessment of the subject matter and presenters at the workshop, a questionnaire was prepared and provided to each participant at the beginning of the workshop. A fragment of the blank questionnaire form is reproduced below.

**SPC/WPRFMC/FAO Regional workshop on fisheries legislation
and community-based fisheries management, April 2005**

This questionnaire is designed to provide organizers with an assessment of the subject matter and presentation

PARTICIPANTS NAME (optional)

Please circle only one score box from 1 (low) to 5 (high) in each of the rows below. Add comments if you wish.

2. Fisheries Management		not useful		some use		very useful
How useful was the subject matter?		1	2	3	4	5
		not well		adequately		very well
How well was the subject matter presented?		1	2	3	4	5

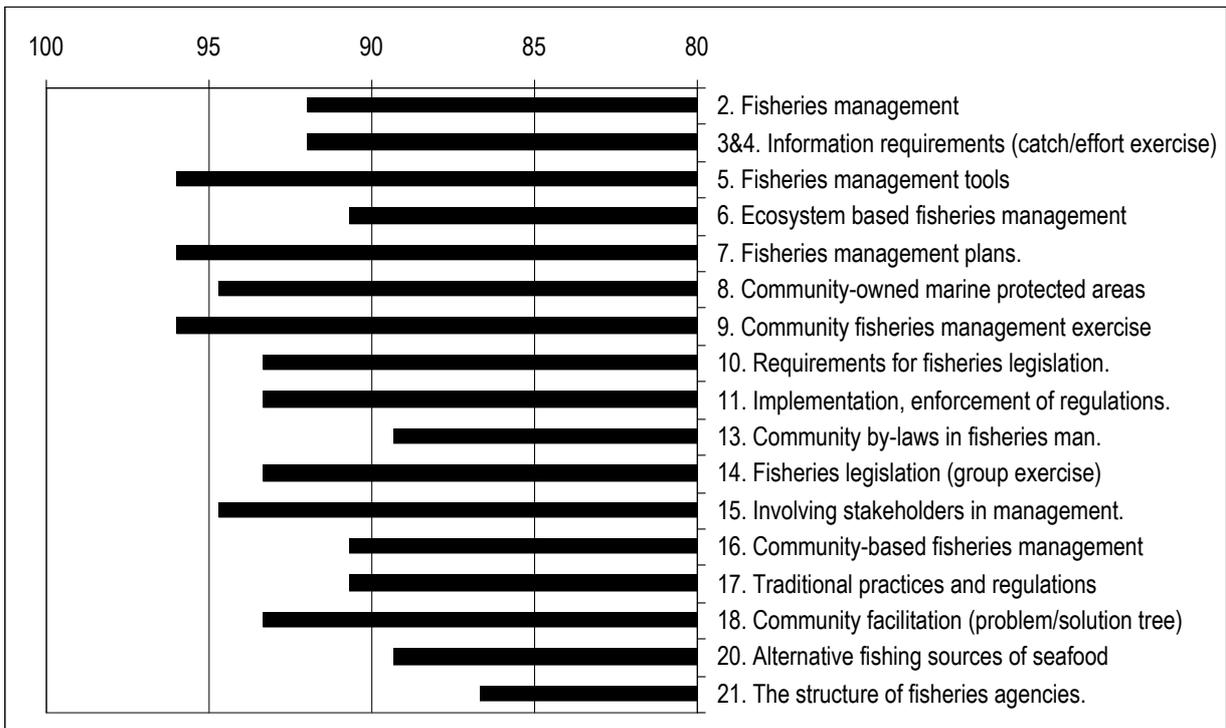
Any comments? Improvements?

Participants expressed appreciation for the roles of the organizations, SPC, WPRFMC, FAO and ComSec in sponsoring the workshop; they believed that the cooperation of these organizations would result in further targeted workshops. The workshop organizer, Ueta Fa'asili, and the WPRFMC hosts, Kitty Simons and Charles Ka'ai'ai, were given high praise.

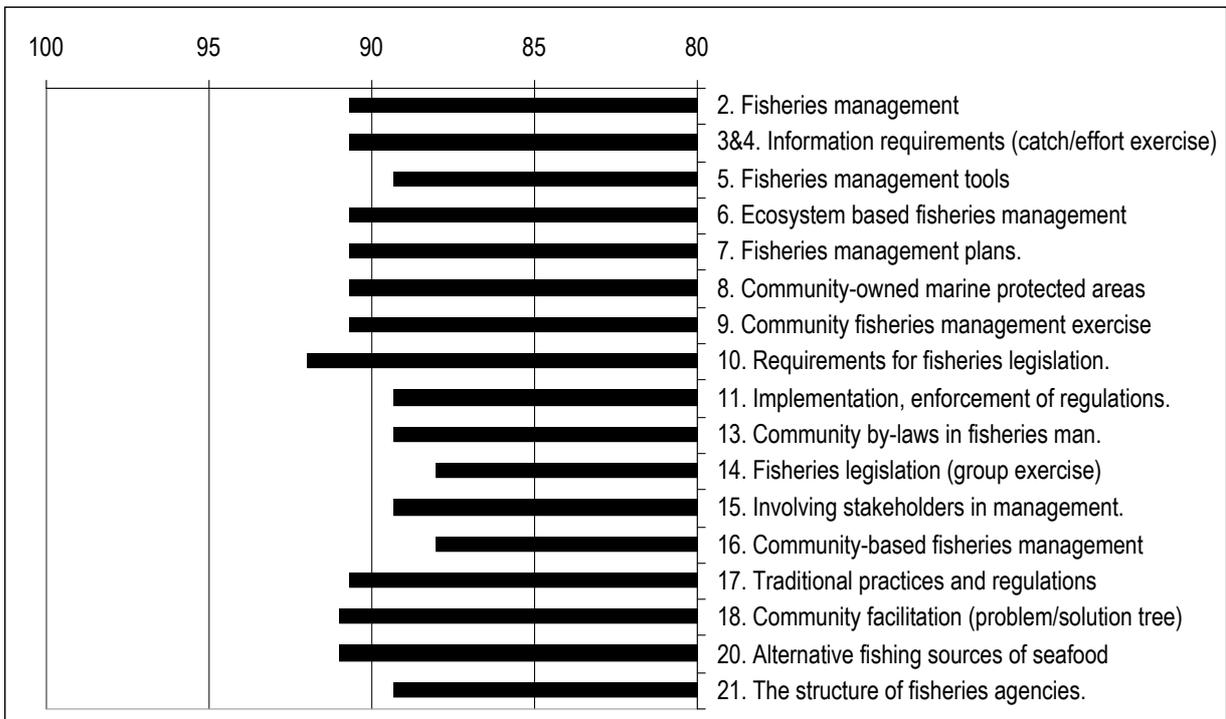
A review of scores of the usefulness of subject material suggests that the workshop topics were well chosen. All subjects received an approval rating close to 90%. The most useful subjects (by a small margin) involved fisheries regulations and fisheries management plans. The least useful subject was on the structure of fisheries agencies (but even this scored over 85% approval).

From comments on the form, some participants appeared to be giving low scores to subjects that were covered too briefly in the short time available. The trend towards giving lower scores to subjects at the end of an arduous workshop should also be taken into account.

Results of the questionnaire completed by participants are provided below. The bar graph represents the mean approval ratings (as percentages) for the **subjects** covered at the workshop.



Results of the questionnaire in relation to the **presentation** of the subject matter are provided below. The bar graph represents the mean approval ratings (as percentages). All presentations were regarded as well done (around 90% approval); unfortunately, some participants tended to mark presenters down if they were less interested in the subject matter.



The following points are taken from a review of comments included on the questionnaire forms.

- Legal advisers should be present at all workshops relating to fisheries management
- There is a need for a more workshop time on producing fisheries management plans

- More group exercises are needed and more time allowed for them
- Community bylaws should be dealt with on a country by country basis.
- More time is needed for ecosystems based management
- There is a need for consultants to review agency organizational structures in-country
- There is a need for sub-regional workshops with the same programme.

Of the above, comments on the need for training in fisheries management (including developing plans) and the involvement of legal expertise at workshops were most common. Participants were most emphatic that the group activities and role-playing provided a significant learning experience in assessing fisheries, managing community fisheries and implementing fisheries regulations.

Most participants believed that the two field trips (to an early morning fish auction at pier 38 and a visit to a traditional aquaculture site) were of great value. Many participants, for example, had not seen a well-run fish auction before. Many said that the field trips also provided respite from the demanding workshop sessions and an opportunity to see some of the island away from the workshop venue.

2. Outcomes and recommendations from the workshop

The following four formal recommendations were made by country representatives at the workshop.

1. Under the agenda item 4 (the analysis of catch and effort data) participants **recommended that the training on the use of the SPC Socio-economic Manual be conducted at the earliest opportunity.** Training in the use of the Socio-economic Manual was discussed at the Nadi workshop on “Fisheries Management and Statistics”.
2. Under agenda item 7 (Fisheries management plans) country participants **recommended that training enabling countries to develop their own fisheries management plans should be conducted as soon as possible.** Goal 1c of the regional plan refers to short courses on the preparation of fisheries management plans.
3. The management of “live food fish” fisheries was discussed as a major problem in some countries. The destructive nature of fishing on spawning aggregations, for example, was a concern to many. **It was recommended that a regional approach be taken in resolving the problems faced by countries in the management of their live food fish industries.**
4. Due to the differences in cultures, customs and traditions in countries of Micronesia, Melanesia and Polynesia, **it was recommended that workshops should be subregional in order to resolve difficulties encountered in the development of community-based fisheries management.**

In addition to the formal recommendations given above, the interest and concerns of participants suggest that there is a need to hold a “fisheries and the marine environment” workshop for two senior representatives from each country; one from an environmental agency and one from a fisheries agency. This is needed to address the lack of cooperation between such agencies and to allow fisheries managers to address ecosystems-based fisheries management and the development of marine protected areas. This workshop was one of the activities recommended in the SPC strategic plan.

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G. Workshop programme

DAY/TIME	TOPICS	SPEAKERS/DISCUSSION LEADERS
DAY 1		
0800-0900	Registration	Helene Lecomte, Lee-Ann Choy
0900-0945	FORMALITIES <ul style="list-style-type: none"> • Opening prayer • Statement from FAO • Opening address House keeping announcements	Ueta Fa’asili – Workshop Coordinator Masanami Izumi-Fishery Officer, FAO Kitty Simonds, Executive Director, WPRFMC
0945-1000	1. Introduction to workshop What is this workshop about? What do we expect from it? Why all attendees need to participate	Ueta Fa’asili
1000-1200	2. Fisheries management What is a fishery? What is overfishing? Why manage fisheries? The change of emphasis from “development” to “sustainability”. What are the major threats to fisheries in the Pacific? What marine species are believed to be under threat from overfishing or environmental degradation? What methods of fishing are believed to be the most damaging to the species? Management can be thought of as a way of reducing these threats (the threat to turtles will be addressed as a special case). <i>(participants may discuss critical threats to fisheries in their countries)</i>	Mike King - Consultant Irene Kinan – Council staff
<i>1200-1300</i>	<i>Lunch break</i>	
1300-1400	3. Information requirements in fisheries management The collection of fisheries data is one of the most time consuming tasks undertaken by many fisheries agencies. Why collect fisheries data? For whom is the data collected? What use is made of it? - are the data collected just to fill in annual reports?	Mike King Josh Demello-Council staff Tony Beeching- Council staff
1400-1500	4. The analysis of catch and effort data Practical group exercise on the analysis of catch/effort data. Catch and effort data may be collected from village and commercial fisheries. How may these data be analysed? Although the analysis of fisheries data is beyond the scope of this workshop the basics of doing so will be demonstrated. <i>(all participants will need to bring either a laptop computer and/or a calculator to the workshop)</i>	Mike King
<i>1500-1530</i>	<i>Afternoon break</i>	

1530-1630	<p>5. Fisheries management tools What tools are available to fisheries managers? What fisheries controls, including traditional ones, would allow stocks to rebuild. Options to be discussed could include input and output controls ... <i>(participants are expected to discuss fisheries controls that apply in their own countries)</i></p>	Mike King - background Aymeric Desurmont –SPC Irene Kinan
1630-1700	<p>6. Ecosystem based fisheries management Is there a need for a broader ecosystem approach to fisheries (EAP) to replace the narrower target-species approach to fisheries management? How can environmental issues threatening inshore fisheries be addressed in a cooperative manner (most countries have separate agencies responsible for fisheries and the environment)? What environmental controls would help fish stocks? <i>(participants will discuss relevant environmental controls that apply in their own countries; WPRFM is interested in having this topic thoroughly discussed)</i></p>	Mike King Paul Bartram – Council staff
1830-2030	Reception	<i>Nico's at Pier 38</i>
DAY 2		
0800-900	<p>7. Fisheries management plans Are national fisheries management plans needed in CBFM? What is a reasonable outline for a fisheries management plan?</p>	Mike King
0900-1000	<p>8. Community-owned marine protected areas MPAs represent a particular tool used in fisheries and environmental management. Do they work? If so, how do they work? How can they be established?</p>	Mike King Selaina Vaitautolo- American Samoa
1000-1030	<i>Lunch break</i>	
1300-1500	<p>10. Requirements for drafting and enacting fisheries legislation What are the requirements for fisheries laws? How can fisheries regulations be applied? What regulations can be applied? What can be enforced? <i>(Example - Coastal Fisheries Legislation in Tonga (Manu Tupou)</i> <i>(participants will discuss the present circumstances and requirements of their home countries)</i></p>	Blaise Kuemlangan- FAO staff Martin Tsamenyi- Consultant Manu Tupou – Resource person, UK Marcia Hamilton – Council staff
1500-1530	<i>Afternoon break</i>	

1530-1730	<p>11. The implementation and enforcement of fisheries regulations Implementation of fisheries legislation –institutional and technical needs. Traditional law enforcement requirements. Issues and problems in implementation and enforcement. If a regulation cannot be enforced, is it worth having? Are there better ways of applying fisheries controls? Is there a need for public education (to create sympathy for the aims of fisheries management). Should prosecution be regarded as a last resort? <i>FAO Project country legal strategy summaries >>>> (participants will discuss alternative and innovative ways of applying fisheries controls)</i></p>	<p>Blaise Kuemlangan, Martin Tsamenyi, Manu Tupou Eric Kingma</p> <p>FSM; Kiribati; Marshall Islands; Nauru; Palau</p>
1730-1830	Special session for FAO Project participants	
DAY 3 0600-0730	Field trip to fish market	
0830-1030	12. The implementation and enforcement of fisheries regulations (continued)	
1100-1200	<p>13. Use of community by-laws in fisheries management How can village rules be made into legally enforceable by-laws? Why is there a need to do this? What are the advantages of community by-laws over village rules and national government legislation. <i>(Participants may want to talk about community fisheries controls in their own countries)</i></p>	Eteuati Ropeti - Samoa
1200-1300	<i>Lunch break</i>	
1300-1315	Special session on US marine protected areas	Allen Tom- Guess speaker
1315-1700	<p>14. Practical on Fisheries Legislations – the law review process and substance Participants will either attempt to develop Coastal fisheries legislation for countries that have no legislation in place, or review current coastal fisheries legislation for countries that already have legislation in place, or develop and review community by-laws. The result of the exercise is aimed for use by each respective country after the workshop. <i>(Countries are encouraged to bring along copies of their fisheries legislation or any community by-laws)</i></p>	<p>Blaise Kuemlangan, Martin Tsamenyi, Charles Kaaiai,- Council staff Manu Tupou</p>

DAY 4		
0800-0900	15. Involving fishers and other stakeholders in fisheries management The establishment of community-based fisheries management (CBFM) in subsistence fisheries. The use of community by-laws. The establishment of fisheries management advisory committees (F-MACS) in the management of commercial fisheries (eg on deepwater bottom-fish or sea cucumbers).	Mike King
0900-1000	16. Community-based fisheries management Principles of CBFM. Role of Facilitator and Recorder. What are the benefits and disadvantages of CBFM. Developing a Village Fisheries management Plan (VFMP). <i>(some participants may wish to discuss CBFM in their own country)</i>	Mike King
1000-1300	Field trip (aquaculture) and lunch	
1300-1430	17. Traditional practices and regulations Experience learnt through work of WPRFMC, SPC and FAO <i>(Participant may want to talk about their own traditional practice of managing inshore fisheries resources.)</i>	Aliti Vunisea Paul Bartram
1430-1700	18. Community facilitation and involvement How can fishing communities be empowered to manage fisheries on which they depend? How can fishing groups gain ownership of fisheries management plans? How can fisheries staff facilitate the process? <i>Participant exercise on the use of a problem/solution tree to allow communities (or other fisher groups) to identify problems and suggest solutions</i>	Mike King
1700-1800	Special session for FAO Project participants	
DAY 5		
0800-1000	19. Different models of CBFM practiced in the Pacific islands. Hawaii model Rauí Samoa model	Paul Bartram James Tokotai – Cook Islands Talavou Taua – Resource person, Samoa
<i>1000-1030</i>	<i>Morning break</i>	

1030-1200	<p>20. Alternative fishing methods and sources of seafood</p> <p>How can continuing community commitment be assured?</p> <p>How can communities engaged in CBFM be supported?</p> <p>All fisheries regulations (whether community -based or not) will result in a short-term decrease in the availability of seafood; how can this be addressed? By supporting village-level aquaculture?</p> <p>By encouraging fishing for less exploited species?</p> <p>By fishing in less exploited areas?</p>	<p>Mike King (Background)</p> <p>Josh Demello (Aquaculture in Hawaii)</p> <p>Steve Beverly (FADs)</p>
1200-1300	<p>21. The structure of fisheries agencies</p> <p>As a final consideration, are the organizational structures of fisheries agencies optimal for the management of local fisheries and the promotion of CBFM?</p> <p>Developing an organizational structure and a HRD plan for a fisheries agency (mission statement, goals, activities, outputs and an annual work plan) is beyond the scope of this workshop but the need will be discussed.</p>	<p>Mike King,</p>
1400-1430	<p>22. Regional Strategy</p> <p>Contributions from regional organizations in the implementation of the Regional Strategic Plan on Coastal Fisheries Management Plan and recommendations.</p>	<p>Martin Tsamenyi</p>
1430-1600	<p>Presentation of certificates</p> <p>Closing remarks</p> <p>Closing prayer</p>	<p>Kitty Simonds</p> <p>Ueta Fa’asili</p> <p>Charles Kaaiai</p> <p>Ueta Fa’asili</p> <p>Kitty Simonds</p> <p>Mose Pelasio – Tokelau</p>