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**Report of SPC Regional Policy Meeting  
on Coastal Fisheries Management**

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REPORT OF MEETING

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**SPC Regional Policy Meeting  
on Coastal Fisheries Management**

(Nadi, Fiji Islands, 17-21 March 2003)

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SECRETARIAT OF THE PACIFIC COMMUNITY  
NOUMEA (NEW CALEDONIA)



**SECRETARIAT OF THE PACIFIC COMMUNITY**

**SPC REGIONAL POLICY MEETING ON COASTAL FISHERIES MANAGEMENT**  
**(Nadi, Fiji Islands, 17-21 March 2003)**

**REPORT OF MEETING**

**Noumea, New Caledonia**  
**2003**

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**ACRONYMS**

CBFM	community-based Fisheries Management
CFP	Coastal Fisheries Programme
CMT	customary marine tenure
CSPOD	Canada-South Pacific Ocean Development
FAD	fish aggregation device
FAO	Food and Agriculture Organization of the United Nations; IO, HQ in Rome, Italy
FLMMA	Fiji Locally Managed Marine Areas
HRD	human resources development
IWP	International Water Programme
MPA	marine protected areas
NGO	Non-governmental Organisation
NMFS	National Marine Fisheries Service
SPC	Secretariat of the Pacific Community
SPREP	South Pacific Regional Environment Programme
WPRFMC	Western Pacific Regional Fishery Management Council

## **I. BACKGROUND TO THE MEETING**

The meeting was held in response to a recommendation from member countries and territories at the second Heads of Fisheries meeting in July, 2001. The meeting agreed that it would be “timely to have a broadly based regional consultation or workshop on community-based management of Pacific Island coastal fisheries.” The deliberations and outputs of the policy meeting will become a fundamental part of the SPC Coastal Fisheries Programme’s strategic plan and thus directly shape the activities and outputs of the newly-formed Fisheries Management Section.

The meeting was also to provide a basis for a field study in selected Pacific Island countries to assist fisheries agencies review their capacity to address the problems identified. Finally, all information from the meeting and field study will be used to adapt the work plan and outputs of SPC’s Fisheries Management Section to ensure that these accurately reflect the needs of member countries and territories.

## II. MEETING AIM AND METHODOLOGY

The aim of the meeting was to develop strategies to ensure the sustainable development and management of coastal fisheries in Pacific Island states. The meeting was held to provide a forum for country representatives to address common problems in coastal fisheries and suggest how the SPC Coastal Fisheries Programme and other agencies can assist countries in taking remedial actions.

The methodology included obtaining pre-meeting information on key problems from country representatives through a questionnaire (Table 1). The results were collated as a summary of key problems in coastal fisheries management. At the meeting, participants and resource people shared experiences and participants used problem-solution tree techniques to develop strategies to address the common problems identified.

**Table 1:** Questionnaire form

<p><b>Coastal Fisheries Management Meeting Questionnaire</b></p> <p>Please list as many as four key problems relating to coastal fisheries in your country. Discuss these widely with work colleagues and fishers so that it is generally agreed that the four problems listed are the most important ones. Problems may include fisheries issues relating to overexploitation, use of destructive fishing methods, habitat destruction, data collection, fisheries regulations and enforcement etc. These suggestions are not meant to be restrictive – the problems can include fisheries and environmental issues – or anything that affects coastal fisheries in your country. For each key problem identified, follow the procedure suggested below, entering details on the four parts of the form.</p> <ol style="list-style-type: none"> <li>1) Determine a key problem.</li> <li>2) List the negative effects of the problem (on the fish stock, community, etc).</li> <li>3) List possible solutions to the problem.</li> <li>4) List sustained and practical activities that could be taken to address the problem.</li> <li>5) Finally, you should indicate whether or not you want to make a short (ten minute) statement or presentation on this problem. It is not necessary to give a presentation – your contribution will be taken into account in summaries prepared by SPC and resource staff.</li> </ol> <p>The above problem/solution procedure is described in the SPC manual “Fisheries Management by Communities”. Please fax, email or post the completed form to Ueta Faasili at SPC.</p> <p>-----</p> <p><b>NAME</b> ..... <b>COUNTRY</b> .....</p> <p><b>ORGANISATION</b> ..... <b>POSITION</b> .....</p> <p>-----</p> <p><b>Key problem 1:</b> .....</p> <p><b>Effects of problem:</b> .....</p> <p><b>Causes of problem:</b> .....</p> <p><b>Possible solutions:</b> .....</p> <p><b>Proposed actions:</b> .....</p> <p>.....</p> <p>Do you wish to make a presentation on the above problem? YES NO (circle one)</p> <p>----- <i>The above section (between dashed lines) was repeated four times in the form.</i></p>
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### III. MEETING SUMMARY REPORT

#### 3.1. Background - setting the scene

The Permanent Secretary for the Public Commission in Fiji Islands, Ratu Tui Cavuilati, gave the opening address (*Paper No.1*). Ratu Tui summarised the importance of the inshore fishery and the many changes affecting marine resources within the coastal zone. He stressed the importance of research and management of inshore fisheries. Coastal populations in the Pacific depend heavily on coastal resources for both subsistence and economic reasons; thus the sustainable use and management of resources within the zone is of vital importance. Many attempts at resource management at the community level exist within the countries of the region and there is a need to support work done by organisations, NGOs and agencies in this area. Governments have not always been proactive in the management of coastal fisheries and therefore the meeting is a timely one to put in place strategies to address problems and factors that affect the sustainability of fisheries in the coastal zone.

The Director of Fisheries in Fiji Islands, Mr Maciu Lagabalavu, was nominated to chair the meeting. Mr Ueta Fa'asili, the SPC Fisheries Management Adviser and coordinator of the meeting, provided an introduction to the programme (programme in Section 5).

SPC's Director of Marine Resources, Dr Tim Adams presented a paper on the need for a long-term regional strategy on coastal fisheries management (*Paper No.2*). He provided a summary of the aims and objectives of the workshop. The goal of SPC's Coastal Fisheries Programme (CFP) is that "the long-term social and economic value of small-scale fisheries and aquatic living resource use in the Pacific is optimised." The CFP (as a support and advisory body) can only work with member states to achieve this goal. It is therefore most important that this meeting provide clear guidelines on actions that must be taken and, perhaps develop a regional toolbox of methods, to solve fisheries management problems.

#### 3.2. Key problems in coastal fisheries management

The meeting consultant, Dr Mike King, presented a summary of fisheries management problems and effects based on data from the questionnaire survey (*Paper No.3*). Problems in coastal fisheries, identified by respondents to the questionnaire, are listed in Table 2 in order of decreasing importance (based on the percentage of countries nominating the problem as important). Full details of the survey are summarised in Table 3 of this report.

**Table 2:** Summary of problems in coastal fisheries management

Overexploitation of marine species	78%
Inadequate or outdated fisheries regulations	50%
Inadequate enforcement of fisheries regulations	50%
Lack of capacity in the country (e.g. in stock assessment, data collection)	50%
Destructive fishing methods (e.g. explosives, breaking coral)	39%
Overly efficient fishing methods (e.g. night diving, small mesh nets, scuba)	22%
Overlap between national/provincial/island responsibilities	17%
Shift from subsistence to commercial fishing	11%
Ciguatera fish poisoning	11%
Illegal fishing by foreign vessels	6%

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 (see spreadsheet summary in Table 3).

### 3.3. How well are national fisheries agencies equipped to manage coastal fisheries?

Mr Semisi Fakahau, Chief Programme Officer, Commonwealth Secretariat, presented a paper and discussion on how participants in the fisheries sector are empowered to manage coastal fisheries effectively (*Papers No.4 and 5*).

Mr Fakahau said that one of the major deficiencies in fisheries management in the region and other areas of the world was in the involvement of people who own and use the resources. More emphasis went to the economic and scientific aspects of fisheries management but less to the social aspects. The Commonwealth Secretariat fisheries programme puts more emphasis on the social aspects of fisheries management through capacity development in the coastal small-scale fisheries sub-sector. It uses the human resources development (HRD) approach to ensure the effective participation of owners and users of coastal fishery resources in their management. In Lake Victoria, the HRD approach is applied to the whole fisheries sector, whereas in Tonga it is applied only to one institution (the Ministry of Fisheries) in the fisheries sector. The following points summarise the presentation and the following wide discussion on the topic.

- Capacity building (particularly in resource management) is needed and should be addressed at the sectoral level.
- For community capacity building there is a need for long-term projects (more than two years), and donors should cooperate to cater for this.
- Effective coastal management can only be achieved if capacity building is first addressed through H.R.D.
- Need to take into account customary and cultural issues in the planning process of coastal fisheries management and development projects.
- In the absence of capacity building there are likely to be problems with the sustainability and continuity of projects.
- Training needs should be properly analysed or assessed before training takes place.

### 3.4. The collection and use of fisheries statistics

Mr Masanami Izumi, FAO Fishery Officer, presented a paper on the use of fisheries statistics in the management of coastal and subsistence fisheries (*Paper No.6*). He emphasised the importance of involving communities in data collection and said that training in statistics and data collection is a major need. Although FAO does not have training programmes, specific requests in this area could be considered.

Ms Josie Perez, National Statistics Office from the Philippines, presented a paper on fishery data collection systems development in agriculture censuses in Pacific Island countries. She provided examples of fisheries statistics and data gathered from agriculture censuses. A major challenge is how data already collected in countries (in censuses) can be used for practical management purposes.

In the discussions that followed, many countries emphasised the need for data collection and survey training. A point was also raised by Niue regarding the impracticality of running large-scale data collection surveys on smaller islands with staffing constraints. There is a need for a tool box of methods for both small and large islands. The consultant suggested that there are alternative methods of data collection including the use of senior high school students in keeping log-book records. The meeting made the following recommendation.

**Recommendation 1.** It is recommended that SPC examine ways to assist countries in collecting inshore fisheries data and developing a statistical data storage system with special emphasis on national fisheries agencies with small numbers of personnel.

A second recommendation was made regarding statistical training and later amended to include the provision of advice on the use of data for fisheries management.

**Recommendation 2.** It is recommended that SPC identify resources to conduct training on statistics and data collection. In addition SPC provide advice on the use of these data for fisheries management.

Mr David Hamm, NMFS, Honolulu, described the collection of data and fishery statistics in the US Pacific islands (*Paper No.7*). The provision of quality fisheries data on a timely basis is regarded as very important for management purposes.

Types of surveys applicable to subsistence fisheries were discussed and Etuati Ropeti, of the Fisheries Division, Samoa presented findings of a national subsistence survey in Samoa.

Dr Tim Adams presented a paper describing how regional organizations can assist with the development of national databases (*Paper No.8*). He said that it is impossible to develop a detailed database similar to that for tuna fisheries for subsistence or village fisheries. For such fisheries, agencies should move away from data-hungry intensive fisheries management. However, there is still a need for some statistics. Discussions centred around the need for training and information on statistics and data collection as well as for PROCFISH to train people in-country to allow for continuity. The need to empower communities to conduct monitoring and to allow for information transfer back to the people was also discussed. Discussion resulted in the following recommendations.

**Recommendation 3.** It is recommended that SPC conduct socioeconomic surveys in countries that have MPAs to determine if there are differences between areas with MPAs and areas without MPAs.

### 3.5. National regulations applied to coastal fisheries

The session on fisheries regulations began with a presentation by Transform Aqorau, Legal Counsel at the Forum Fisheries Agency, on national regulations applied to coastal fisheries (*Paper No.9*). He advised the meeting that FFA is obliged to address issues relating to highly migratory fish stocks and is not able to assist island countries in legal aspects relating to their coastal fisheries resources. He advised that coastal fisheries legislation is a complex issue in its own right and justifies the development of legal services within SPC.

There is the general perception of resources as income. He stressed the importance of understanding existing legislation and how this relates to community-based fisheries activities and use. There was a discussion on the possibility of SPC conducting awareness workshops and learning materials in this area. SPC does not have a legal framework, but national governments could use their own legislation and existing by-laws.

**Recommendation 4.** It is recommended that SPC establish a legal service to respond to requests from island countries for assistance in legislation related to coastal fisheries.

A paper on the application and enforcement of fisheries regulations was given by Dr Mike King (*Paper No.10*). The presentation suggested several points that could be considered by participants.

- Difficulties of enforcement: Are there alternatives to costly government enforcement (e.g. community-based fisheries management and enforcement)?
- Are there ways of simplifying enforcement?: Is there value in concentrating enforcement on those marketing fish rather than on those catching them, for example.
- Application of minimum size limits: Would it assist countries to have a register and guide to recommended minimum sizes for say the 30 most important inshore species?
- Public awareness: What can be done in this area? Could an agency such as SPC assist with publicity material on the need to manage inshore fisheries and apply regulations?

Discussions included the possibility of harmonizing legislation and regulations. There are difficulties because of the complexities within countries and communities. One suggestion was to decentralise, rather than centralise regulations, and make use of island councils, etc.

It was also suggested that maximum size limits as well as minimum size limits should be considered. Also, as size limits already exist, the challenge is in enforcing these regulations. There was also a need for community awareness and public awareness in general concerning regulations.

**Recommendation 5.** It is recommended that SPC document and recommend regional size limits for important species to help countries in the preparation of regulations.

Another problem is that, in many cases, fisheries officers were also enforcement officers. The need for enforcement and awareness work on legislation was supported by many countries.

**Recommendation 6.** It is recommended that SPC develop non-technical publicity material to be used to assist countries in raising public awareness on the need for fisheries management and fisheries regulations.

Participants raised the possibility of SPC engaging a consultant to review legislation, which was outdated in most countries. Mr Fakahau suggested that there was a need for simplifying the words used in regulations so that these could be understood at the community level. This reflects the tendency to focus too much on scientific and economic factors and not enough on the people that use the resources.

Samoa suggested that there was a real need for prosecution in fisheries in order to provide a strong message to the public. The Director of Marine Resources, Dr Tim Adams, agreed to look at issues raised in relation to enforcement and legislation.

### 3.6. The involvement of fishing communities in coastal fisheries management

A session on the involvement of communities in coastal fisheries management was introduced by Dr Mike King (*Paper No.11*). One way to ensure that subsistence or village fisheries are sustainable is for fisheries agencies to encourage and support fishing communities to manage their own fisheries resources. In this case, the community is encouraged to define its own problems with fish stocks and the marine environment and propose solutions to these problems. The community sets its own conservation rules, and it (rather than the government) has a responsibility to enforce them.

American Samoa suggested that it was important to include other organizations and stakeholders in the community-based management process. Niue requested that the challenges and failures of community-based management initiatives be discussed and shared. Tuvalu raised the time period required before a community can successfully manage its fisheries resources.

Participants also discussed alternative sources of seafood and income that could be offered to communities when management plans, including MPAs were put in place. Alternatives suggested included the provision of FADS and this should be supported by SPC.

### 3.7. Country experiences in the involvement of communities

Several countries provided details of their experiences with the involvement of communities in fisheries management.

- Marshall Islands - Terry Keju briefed the meeting on Marshall Islands' project and outlined some of the challenges faced (*Paper No.12*).
- Fiji (FLMMA) - Alifereti Bogiva, gave a brief summary of the approach and process used by FLMMA in community-based management in Fiji.
- Niue (International Waters Programme) - Sione Leolahi Explained the process and objectives of their project. Concerns were a very low input from the young people and the belief that participation should be compensated (*Paper No.13*).
- Cook Islands (raui System) - Nooroa Roi described the system that is based on tradition and respect and does not rely on having any legislation in place (*Paper No.15*).
- American Samoa - Fatima Sauafea emphasised that differences in economies and lifestyle can affect the management process and the degree of success. She suggested how to get more participatory motivation. One of the main problems encountered was with the time schedule set and the inability of communities to meet this (*Paper No.14*).
- Samoa - Etuati Ropeti said that the success in Samoa was due to concerted effort, monitoring, and consistent checks on the programme at the ground level.
- Solomon Islands - Kenneth Bulehite described the SPREP/IWP programme that is still in its initial stages (*Paper No.16*).
- Vanuatu - Graham Nihomo provided a summary of the management projects in Vanuatu and challenges faced. Conflict of legislation, responsibilities between customary and administration, and lack of capacity to enforce fisheries regulations were major problems.

Participants praised the initiatives on community-based management in the region and believed that there was a move from culture as a “hindrance” into a tool that can be used in fisheries management. Mr Semisi Fakahau noted that there is also a need for publicity material on all the good work that has been done in the Pacific region as most available materials are from outside the region.

Nauru suggested that for countries like theirs, there was more a need for co-management given the small land areas and overlap in responsibilities of the different government departments and agencies. Especially since the country lacks community structures.

Samoa stated that, at this stage, some problems have begun to emerge in the Fisheries Management programme. These included people fishing within management areas and the programme now becoming a political tool where some of the projects had strongest support around election periods. An additional problem was related to sustaining people's interest especially when CBFM does not produce immediate benefits.

There was a need for training in data collection at all levels and the possibility of developing a simple, region-wide method of surveying subsistence fisheries and a database system to store information was required. There was also a need for awareness materials to be developed by SPC for the use of all countries.

**Recommendation 7.** It is recommended that SPC assist in the development of national community programmes for the management of coastal fisheries resources

### **3.8. Gender issues in the management of coastal fisheries**

A presentation on gender issues in coastal fisheries management was given by Aliti Vunisea of SPC. (*Paper No 17*) This was discussed as an issue that has to be considered in all levels of coastal fisheries management. It was argued that women are better managers and the possibility of considering women taking over management initiatives in the future should be considered. There was a need to consider ways to address the added responsibilities that women face in their involvement in the traditional and market economy, taking on dual- and triple-day programmes.

Discussion included the suggestion by Mike King that women had a longer-term (or inter-generational) view of conservation than men who were more concerned about obtaining seafood on a daily basis - the inclusion of women in coastal management was therefore vital.

### **3.9. Customary marine tenure (CMT) and the empowerment of communities**

SPC Fisheries Management Adviser, Mr Ueta Fa'asili, introduced the session on Customary Marine Tenure and the empowerment of communities (*Paper No 18*).

Etuati Ropeti discussed the process of empowerment of Samoan communities to manage coastal fisheries. Alifereti Bogiva gave examples of customary marine tenure in Fiji (*Paper No 19*) and Tevita Latu gave the example of Tonga (*Paper No.20*) written with Marc Wilson).

Mr Blaise Kuemlangan presented a paper on the empowering coastal fishing communities (*Paper No.21*). Discussions suggested that proper legislation could assist in enforcement. Because of issues that face fisheries agencies there is the question whether the legislation in place is sufficient to address new problems. This supported a proposal that SPC assist in legislation formulation. There is also a need to work on by-laws for countries with community-based programmes. Dr Ken MacKay provided information on MPRs in countries and their system of management.

### **3.10. SPC work related to the management of coastal fisheries**

There were several presentations on SPC work related to the management of coastal fisheries. SPC's Principal Scientist, Mr Pierre Labrosse, discussed the work of PROCFISH focussing on the collection of statistics. The Community Scientist, Dr Mecki Kronen, presented a paper on socio-economic data (*Paper No.22*).

SPC's Fisheries Development Officer, Mr Steve Beverly, presented a paper on outer-reef slope fisheries and the use of FADs (*Paper No.23*). Following the presentation, both Tokelau and Palau requested to be considered for the introduction of FADs.

Aquaculture Adviser, Mr Ben Ponia, presented a paper on SPC's work in aquaculture (*Paper No.24*). Following the presentation, Palau suggested that SPC and FAO examine the potential for aquaculture in member countries; Solomon Islands requested training assistance in prawn farming.

SPC's Senior Scientist, Mr Being Yeeting, gave a presentation on the live food fish and aquarium fish trade as community projects. He also discussed a live fishery management plan endorsed at a recent meeting.

### **3.11. Organisations, donors and NGO involved in fisheries management.**

Mr Masanami Izumi, FAO Fishery Officer, gave a presentation on the work of FAO in relation to fisheries and emphasized FAO's major meeting schedule in 2003 (*Paper No.25*).

Mr Walter Ikehara of the Western Pacific Regional Fisheries Management Council (WPRFMC) gave a presentation on the work of the council in US Pacific islands (*Paper No.26*). Ms Michel Lam presented the work of the Marine Aquarium Council in relation to the aquarium fish trade (*Paper No.27*). Dr Warwick Nash gave a presentation on the role of the WorldFish Center based at SPC (*Paper No.28*).

Ms Sophia Bettencourt of the World Bank gave a presentation on the initiatives of World bank around the region and its work in coastal area management.. Ms Paula Holland of the International Waters Programme summarised the aims, objectives and processes used in the programme (*Paper No.29*). The programme is still in its implementation stages. Ms Mary Powers gave a presentation on SPREP's coastal management activities.

Dr Kenneth McKay described the work of CSPOD and discussed the main development issues areas to consider when applying for funding (*Paper No.30*).

It is necessary to create opportunities for younger qualified people and perhaps regional organizations such as SPC and SPREP could look at opportunities. Priorities have to be decided by the countries. If training is seen as a major need, then countries should request this. Training opportunities can also be through attachments to other countries. For example, those in new community-based systems can be trained and taught through work with other fisheries agencies involved in CBFM.

Mr Ed Peek presented a brief summary of points to consider when formulating a proposal (*Paper No.31*). He emphasised the need to keep to the development priorities of the day and address issues that donors would like to see included in the projects they fund. The importance of keeping in mind that project implementation and management initiatives is a two way process between the donors and the communities. There should always be room allowed for flexibility. It is also important that success should not be measured during implementation of the project but after the completion of external assistance for the project.

### **3.12. Problem-solution tree analyses**

A presentation on the use of problem-solution trees in solving problems related to coastal fisheries management was given by Mike King (*Paper No.32*).

### **3.13. Group discussions to formulate action plans**

Participants were separated into four groups to address the problems summarised in the results of the questionnaire survey (given in Table 3). In the group meetings, participants discussed effects and causes for each problem before suggesting solutions and related remedial activities.

### **3.14. Presentation of group results**

A nominated person from each working group presented their group's plan, including solutions and suggested actions to address each problem.

### 3.15. Summary of actions for the management of coastal fisheries

The working group results were collated and summarized (Table 4) before being presented back to the meeting by Mike King for further discussion.

A survey form produced a summary of training and assistance required by individual countries and territories (Table 5).

Final discussions were wide ranging and resulted in several recommendations. American Samoa believed that community representatives should be given an opportunity to participate at the Heads of Fisheries meeting. The response from SPC was that countries could look at the possibility of including community representation in their delegation.

There was also a recommendation that any future work of the coastal management section should include capacity building. This should involve attachments to SPC and to other countries with management initiatives in place. In summary the recommendations were as follows.

**Recommendation 8.** It is recommended that SPC's Coastal Fisheries Management section should assist with capacity building through attachments of island nationals.

Other discussions by participants centred on the prioritization of SPC activities and resulted in the following recommendations.

**Recommendation 9.** It is recommended that activities of SPC's Coastal Fisheries Management section should not be prioritized as countries have different levels of activities which may not accurately be reflected if prioritized.

**Recommendation 10.** It is recommended that SPC's Coastal Fisheries Management section coordinate its activities with the aquaculture, FAD, and artificial reef programmes to promote these as alternatives to existing coastal fisheries.

**Recommendation 11.** It is recommended that SPC establish a framework for the implementation of the enforcement of coastal fisheries regulations.

There was a discussion on the time frame of the proposed field study of the Coastal Fisheries Management section and the report of this meeting. Mr Fa'asili replied that the report and the final draft of the field study will be completed before the Heads of Fisheries meeting in August.

The meeting was closed by Dr Tim Adams, who assured participants that SPC will produce the draft report of the meeting within the next two weeks. All information from the meeting will be used to adapt the work plan and outputs of the SPC's Coastal Fisheries Management section to ensure that it accurately reflect the needs of member countries and territories.

**Table 3:** Key problems in coastal fisheries management Results from respondents to the questionnaire

KEY PROBLEM	Associated problems (causes?)	A.Samoa	Cook Islands	FSMicronesia	Guam	Fiji	Kiribati	Marshall Islands	Nauru	Niue	N.Marianas	Palau	PNG	Samoa	Solomon Islands	Tokelau	Tonga	Tuvalu	Vanuatu	# of countries	% of countries	Proposed solutions
declining fish catches	1a) inadequate or outdated fisheries regulations																			4	22	revise regulations; zones; bylaws? SPC
	1b) non-compliance; poor enforcement of regulations																			7	39	better awareness, enforcement; CBFM?
	1c) overlap between national, provincial, island councils																			3	17	review legislation; collaboration; conflict resolution
	2) illegal fishing by foreign vessels																			1	6	increased enforcement, penalties, confiscation
	3) overexploitation; overfishing; excessive fishing effort																			14	78	management plans, regulations, CBFM, MPAs
	4a) overly efficient methods - night-diving with lights																			1	6	ban or restrict use of lights for uw fishing
	4b) overly efficient methods - small mesh nets,																			3	17	regulations; licenses for nets
	4c) overly efficient methods - hookahs, scuba,																			1	6	restrict or ban use of SCUBA/hookah
	5a) destructive fishing methods - poisons, explosives																			6	33	increase awareness and fines; use CBFM
	5b) destructive fishing - dredges, breaking coral, others																			2	11	ban or restrict use of dredges
degradation of marine environment including coral reefs	6) shift from subsistence to commercial fishing																			2	11	licenses for commercial fishing; FADs
	7) ciguatera fish poisoning																			2	11	decrease pollution, protect habitats?
	8a) lack of agency capacity (res. mapping, assessment)																			7	39	training for staff; socioeconomic data; HRD; SPC
	8b) lack of agency capacity (data collection etc)																			8	44	training; database; use of schools; SPC
	1) degradation, poor land management, siltation																			6	33	restrict forestry, agriculture near rivers
	2) sewage; water run-off																			4	22	drainage improvement;
	3) fertilizers, pesticides, organic pollutants																			3	17	restrictions on use; guidelines for disposal
	4a) waste disposal; rubbish tips																			3	17	waste management plan; awareness
	4b) disposal of oil products																			1	6	improve oil waste management (recycling?)
	5) alien and invasive species																			1	6	controls on imports
	6a) uncontrolled or excessive coastal development																			3	17	zoning; balanced development; EIAs; reserves?
	6b) destruction of wetlands, mangroves																			2	11	restore wetlands; mangrove planting; CBFM
	6c) over-use of coastal zone; increasing tourism																			2	11	education; awareness-raising
NOTES																				18	<< number of countries responding	

Many questionnaire respondents listed "causes" of a problem rather than the "Key problem" itself; these are listed in column two of the above summary

For example, "shift from subsistence to commercial fishing" may be the cause of the more important (or key) problem of "declining fish catches"

KEY: MPA = Marine Protected Area; CBFM = Community-based Fisheries Management; SPC = assistance requested from SPC

**Table 4.** Solutions and proposed actions from working groups

Key Problem	Associated problems or causes	Solutions	Actions Phase 1	Phase 2	Phase 3	Phase 4
<b>Fisheries-related problems</b>						
1a) inadequate or outdated fisheries regulations	a) no capacity to review laws b) laws culturally insensitive c) lack of political support d) value of fisheries not appreciated	a) increase capacity b) review laws c) education, awareness. d) assess value of fisheries	a) Discussions with line agencies. b) Assessment of effect of outdated regulations. c) Awareness building d) awareness programmes	a) Identify capacity needs  Consultation with government	a) Development/application  Consultation with agencies on change in regulations	a) Implementation
1b) non-compliance; poor enforcement of regulations	a) high cost of enforcement b) penalties too low c) courts do not prosecute d) lack understanding of law	a) Reduce costs b) Amend legislation c) on-the-spot fines d) public awareness prog.	a) Increase budget allocat.  c) reduce process time d) training/workshop	a) Coordinate with other agencies  c) reduce to minor contravention	a) Public awareness	a) request assistance
2) Illegal fishing by foreign vessels	a) Captain's ignorance b) Limited surveillance capacity b) commercial demands or motives c) No licenses or permits	a) educate the captains coupled with strong fines b) improve awareness and increase surveillance capabilities and awareness c) issue licenses and permits nationally/regionally	communicate to boat owners (through flag state) fishing access requirements and EEZ delimitations.	Request assistance from FFA		
3) overexploitation; overfishing; excessive fishing effort	a) lack of management plans b) technological changes c) high dependency on resource	a) prepare management plans b) apply regulations c) decrease dependency	a) establish MPAs with monitoring/enforcement b) improve enforcement c) increase awareness	a) apply regulations b) restrict some gear c) stock enhancement	a) improve legislation  c) examine alternative	c) FADs, aquaculture
4a) overly efficient fishing methods - night-diving with lights	a) Requirements for income b) Minimum fine & cost c) Restore traditional fishing	a) find alternatives b) Apply regulations c) Apply regulations	a) training in other methods b) consult with stakeholders c) consult with stakeholders	a) eg - introduce FADs b) develop enforcement c) enforcement	Public awareness materials	Enhance community participation
4b) overly efficient fishing methods - small mesh nets,	a) Over- harvesting b) Technology improvement c) Loss of breeding stocks	a) Improve regulations b) Improve regulations c) seek SPC assistance	a) Moratorium b) Legislation c) stock assessment	a) Stock assessment b) Awareness raising c) monitoring	a) Monitoring b) Monitoring	
4c) overly efficient fishing methods - hookahs, SCUBA,	Need to increase catch/income. Availability of diving gear	Total ban on unsuitable gear	Introduce regulations to ban use of gear	Enforce the new regulations		

5a) destructive fishing methods - poisons, explosives	Smuggling of explosives  Availability of chemicals  Lack of alternative fisheries	Establish rigid control  Awareness campaign  Create opportunities	Harsh penalties  Training workshop  Encourage offshore fishing (FAD program)	Secure storage sites  multi-media campaigns  Community aquaculture	Awareness programme  Monitoring	Monitoring
5b) destructive fishing methods - dredges, breaking coral, others	a) ineffective management b) lack of awareness c) lack of alternatives	a) effective management b) increase awareness c) create opportunities	a) review existing status b) awareness campaign c) aquaculture	a) implement changes b) workshop with stakeholders c) offshore fishing (FADs)	b) publicity material	b) School curriculum
6) shift from subsistence to commercial fishing	a) technological innovation b) over-capacity	a) restrict gear & methods b) regulate capacity	a) develop regulations b) TAC, licensing, closed areas	awareness campaign	monitoring & enforcement	
7) ciguatera fish poisoning	a) destruction of corals by subsistence fishers, ship wrecks, channel clearing, reef blasting, sand mining And by tourists and snorkellers b) waste water, sewage	a) Reduce coral destruction   b) Reduce contamination	a) Discussion with tourist associations, hotels, dive shops and construction companies  b) discussions with relevant agencies	a) Prepare publicity material	a) Distribute publicity material – dive shops, airports, hotels etc	
8a) lack of agency capacity (resource mapping ,assessment)	Lack of qualified staff Limited funding for training	Seek SPC/aid assistance	Conduct training programme			
8b) lack of agency capacity (data collection etc)	a) lack of qualified staff b) lack of equipment	a) upgrade staff skills b) upgrade equipment	a) develop HRD program b) develop software, IT	workshops, training	attachments; in-service trg.	scholarships
<b>Environment-related problems</b>						
1) degradation, poor land management, siltation						
2) sewage; water run-off	a) untreated sewage b) erosion c) bacteria	a) proper treatment b) land-use plans c) education/awareness	a) infrastructure b) stakeholder committees c) EIAs	a) water monitoring b) ICZM c) Publicity campaigns	a) contingency plans b) Awareness raising c) Monitoring	a) eg warning signs b) Monitoring
3) fertilizers, pesticides, organic pollutants	a) no controls on farming a) no management plan	a) control farming practices b) implement plan	a) discussions with farmers and fishers b) public awareness	b) media campaign		
4a) waste disposal; rubbish tips						
4b) disposal of oil products						

5) alien and invasive species	a) Lack of enforcement & quarantine b) Loss of biodiversity c) loss of native species	a) build up capacity b) removal of alien spp c) preventative measures	a) training b) Awareness/ publicity c) improve quarantine	a) interagency cooperation b) Research c) stronger legislation	a) stronger laws/penalties b) inter-agency cooperation c) Awareness raising	a) Monitoring b) Monitoring c) Monitoring
6a) uncontrolled or excessive coastal development	a) soil erosion b) weak legislation c) loss of habitat	a) land use manag. plan b) strengthen legislation c) mangrove reseeded	a) Stakeholder committees b) request assistance c) ICZM	a) ICZM b) New controls/laws c) MPAs	a) public awareness camp. b) public awareness camp c) reef reseeded	a) monitoring b) monitoring c) monitoring
6b) destruction of wetlands, mangroves	Excessive development	Rehabilitation (replanting?)	Install requirement for EIAs			
6c) over-use of coastal zone; increasing tourism						

**Table 5.** Training and assistance requested by participants. Numbers represent each country's rating of importance (1 = high priority)

SERVICES TO BE PROVIDED	COUNTRIES																
	Am. Samoa *0	Cook Islands	FSM	Fiji	Kiribati	Marsahll Is *1	Nauru	Niue	CNMI	Palau	PNG *2	Samoa	Solomon Is	Tokelau *3	Tonga	Tuvalu	Vanuatu
Legislation	3	6	1	6	5	4	5	6	2	3		2	6	6	7	6	5
Stock Assessment	6	3	4	4	3	2	6	5	1	2	1	3	4	4	4	1	4
Minimum size limits		7	7	5	4		7	7	3	1		4	5		6	8	7
Coastal Fisheries Management plans	2	4	2	1	6		4	2	4	4		6	3	7	3	4	6
Statistics	4	1	3		1	1	2	1	7	5	4	1	7	2	2	2	2
CBFMP	1	5	6	7	7		3	3	6	6	3	5	2	1	5	3	1
Training	5	3	5	2	2	3	1	4	5	7		3	1	5	1	5	3

\*0- 4<sup>th</sup> rating was given to Enforcement

\*1- Ask Marshall about its CBFMP- not rated

\*2- 2<sup>nd</sup> rating was given to Resource Mapping (fish and habitat)

\*3- 3<sup>rd</sup> rating was given to ciguatera survey

#### IV. RECOMMENDATIONS FROM THE MEETING

**Recommendation 1.** It is recommended that SPC examine ways to assist countries in collecting inshore fisheries data and developing a statistical data storage system with special emphasis on national fisheries agencies with small numbers of personnel

**Recommendation 2.** It is recommended that SPC identify resources to conduct training on statistics and data collection. In addition it is recommended that SPC provide advice on the use of these data for fisheries management.

**Recommendation 3.** It is recommended that SPC conduct socioeconomic surveys in countries that have MPAs, to determine if there are differences between areas with MPAs and areas without MPAs.

**Recommendation 4.** It is recommended that SPC establish a legal service to respond to requests from island countries for assistance in legislation related to coastal fisheries.

**Recommendation 5.** It is recommended that SPC document and recommend regional size limits for important species to help countries in the preparation of regulations.

**Recommendation 6.** It is recommended that SPC develop non-technical publicity material to be used to assist countries in raising public awareness on the need for fisheries management and fisheries regulations.

**Recommendation 7.** It is recommended that SPC assist in the development of national community programmes for the management of coastal fisheries resources

**Recommendation 8.** It is recommended that SPC's Coastal Fisheries Management section should assist with capacity building through attachments of island nationals.

**Recommendation 9.** It is recommended that activities of SPC's Coastal Fisheries Management section should not be prioritized as countries have different levels of activities which may not accurately be reflected if prioritized.

**Recommendation 10.** It is recommended that SPC's Coastal Fisheries Management section coordinate its activities with the aquaculture, FAD, and artificial reef programmes to promote these as alternatives to existing coastal fisheries.

**Recommendation 11.** It is recommended that SPC establish a framework for the implementation of the enforcement of coastal fisheries regulations.

**V. PROGRAMME FOR THE MEETING**

8.30 am.

**1. Background – setting the scene**

Opening of the meeting	Ratu Tui Cavuilati P. Secretary, Fiji PSC
Election of a Chair person	U. Faasili
Introduction to the meeting and programme	U.Fa'asili
The need for a long-term regional strategy on coastal fisheries management	T.Adams

**2. Key problems in coastal fisheries management**

Summary of fisheries management problems and effects from questionnaire survey.	M. King
Discussion of problems and effects (some participants to expand on their questionnaire entries)	Participants

**3. How well are national fisheries agencies equipped to manage coastal fisheries?**

Capacity development in the coastal fisheries sub-sector	S. Fakahau
Discussion and recommendations	Participants/Chair

**4. The collection and use of fisheries statistics**

Introduction – the use of fisheries statistics in the management of coastal and subsistence fisheries	M. Izumi
Data collection in island countries	
- Fishery data collection system development in agriculture census in the Pacific Island countries	J. Perez
- NMFS' activities on data collection / fishery statistics in the U.S. Pacific Islands	D. Hamm
Types of surveys applicable to subsistence fisheries	
- Marshall Islands' experience	T. Keju
- Samoa's experience	E. Ropeti
How regional organisations can assist with the development of national fisheries databases.	T.Adams
Discussion and recommendations	Chair

**5. National regulations applied to coastal fisheries**

Legislation covering the management of coastal fisheries	T. Aqorau
The application and enforcement of fisheries regulations. Size limits to be regionalised? Is assistance required? Discussion	M. King

**6. The involvement of fishing communities in coastal fisheries management**

The difficulties of centralised fisheries management	M. King
Community-based fisheries management (CBFM)	

**7. Country experiences in the involvement of communities**

The Marshall Islands experience	T. Keju
The Fiji experience	A. Tawake /K. Tabunakawai
The Niue Experience	S. Leolahi
The American Samoa experience	F. Sauafea
The Cook Island experience - Raii	Nooroa Roi
The Samoa experience	E. Ropeti
The Solomon Islands experience	K. Bulehite
The Tonga experience (AusAID project)	T. Latu
Vanuatu experience	G. Nimoho

**8. Gender issues in the management of coastal fisheries**

Gender roles in coastal fishing communities	A. Vunisea
Discussion	

**9. Customary marine tenure(CMT) and the empowerment of communities**

Introduction; indigenous rights in coastal fisheries resources	U. Fa'asili
Legislating for empowering coastal fishing communities	B. Kuemlangan
The use of village by-laws to support community- based fisheries management in Samoa	E. Ropeti
An example of CMT from Fiji	A. Bogiva
An example of CMT from Tonga	Tevita Latu*

**10. SPC work related to management of coastal fisheries**

Input of Research Assessment in to Management - Social economics	P. Labrosse /M. Kronen
Outer slope fisheries	S. Beverly
Aquaculture	B. Ponia

Live food fish/ Aquarium fish as community projects

B. Yeeing

***11. Organisations, donors and NGOs involved in fisheries management projects***

FAO	M. Isumi
The World Bank/IUCN	S. Bettencourt
SPREP	Paula Holland
Support for fisheries management projects (based on demand, this session may be expanded into a workshop on the preparation of proposals)	Ed Peek
C-SPOD	K. Mackay
WPRMC	Walter Ikehara
Marine Aquarium Council	M. Lam
WorldFish Center	Warwick Nash

***12. Problem /Solution tree analyses***

The use of problem/solution trees in problem solving	M. King
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***13. Group discussion to formulate action plan***

Participant groups to address key problems	Participants
Causes, solutions and possible remedial actions are required for each key problem.	

***14. Presentation of group results***

Spoke person from each group to present results	Presenters
Discussion of group results	Participants

***15. Summary of actions for the management of coastal fisheries resources.***

Presentation of the summary of proposed actions	U. Fa'asili/M. King
Close of meeting	T. Adams (Director of Marine Resources)

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## VII. PAPERS PRESENTED AS ANNEXES

Paper	Author	Title
1.	Ratu Tui Cavuilati	Secretary for the Public Service, Fiji.
2	Dr. Tim Adams.	Why Regional Strategies for Coastal Fisheries Management?
3	Dr. Mike king	Problems in coastal fisheries management in Pacific island countries; summary of results from a questionnaire survey
4	Semisi Fakahau	Lake Victoria Regional Human Resources Development Programme
5	Semisi Fakahau	A Human Resource Development Programme.
6	Masanami Izumi	Regional Policy Meeting of Coastal Fisheries Management
7	David C. Hamm	Activities on Data Collection and Fishery Statistics in the U.S. Pacific Islands
8	Dr. Tim Adams	SPC role in relation to quantitative information about Pacific island fisheries.
9	Dr. Transform Aqorau	Overview of Legislation Governing Coastal Fisheries Management in the Pacific Islands.
10	Dr. Mike King	The application and enforcement of fisheries regulations in Pacific island countries.
11	Dr. Mike King	The difficulties of centralised fisheries management in Pacific island countries; involving communities and fishers in management.
12	Terry Keju	Community-Based Fisheries Management Program in the Marshall Islands
13	Sione Leolahi	The Niue Experience experiences in the involvement of communities (SPREP IWP)
14	Fatima Sauafea	Community-based coastal fisheries management in American Samoa
15	Nooroa Roi	The Raui System in the Cook Islands
16	Kenneth Bulehite	Solomon Islands Experience in Community and Related Coastal Fisheries Management
17	Aliti Vunisea	Gender Issues in Coastal Management
18	Ueta Faasili	Indigenous Rights and its Role in Fisheries Management in the Pacific Islands
19	Alifereti Bogiva,	Customary Marine Tenure: Implications on Community-Based Fisheries Management in Fiji.
20	Tevita Latu and Marc Wilson	Tonga's approach to coastal fisheries management
21	Blaise Kuemlangan	Creating legal space for community based fisheries management and customary maritime tenure in the Pacific: issues, trends, threats and opportunities.
22	Mecki Kronen	The ProcFish and DemEcoFish Research Project – Objectives of the Socio-Economic Component.
23	Steve Bervely	SPC's Fisheries Development Section: some thoughts on our role—past, present, and future—in coastal fisheries management in the region.
24	Ben Ponia	Aquaculture alternatives in the Pacific
25	Masanami Izumi	The FAO in the Pacific
26	Walter Ikehara	Investigating the Effects of Import and Export of Reef Fish on Pacific Island Economies and Resources.
27	Mitchell Lam	Why certification is needed for the Aquarium industry?
28	Warwick Nash	The role of the WorldFish Center in the Pacific
29	Paula Holland	The International Waters Programme and coastal management
30	Kenneth Mackay	Community Managed Marine Protected Areas in the Pacific Islands: Summary of Case Studies.
31	Ed Peek	Support for Fisheries Management Projects What donor agencies are looking for.
32	Dr. Mike King	The use of problem/solution trees in solving fisheries management problems.
33	Being M. Yeeting	The challenges in the management of the Live Reef Food Fish Trade in the Pacific