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The Ecosystem Approach to Coastal Fisheries and Aquaculture in Pacific Island Countries

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1. BACKGROUND

1. During 2007 and 2008 the Secretariat of the Pacific Community (SPC) and The Nature Conservancy (TNC) collaborated on a study entitled The Ecosystem Approach to Coastal Fisheries and Aquaculture in Pacific Island Countries. The study commenced with the conducting of a regional workshop on the topic in Noumea, New Caledonia in November 2007. In association with the workshop, a questionnaire survey was carried out to gather basic information on the ecosystem approach to fisheries (EAF) in Pacific Island Countries and Territories (PICTs), particularly the current implementation status, and future plans and requirements in the region. This was followed by a more detailed study which included field visits to countries of the region and consultations with relevant national authorities, a comprehensive review of relevant literature and other information, and inputs from a number of technical specialists knowledgeable on aspects of the EAF. Opportunities were also taken during the study to make presentations to, and gather feedback from, the Special Session of the Heads of Fisheries Meeting held in Apia, Samoa in February 2008, and the FAO Workshop on the Ecosystem Approach to Coastal Fisheries in the Pacific Islands held in Nadi, Fiji in November 2008.

2. The full report of the study has been jointly published by TNC and SPC, and distributed at the 6th Heads of Fisheries Meeting. The present discussion paper summarises the highest priority issues and gaps affecting the adoption and implementation of the ecosystem approach to coastal fisheries and aquaculture in PICTs, discusses strategies or proposals for addressing these, and identifies potential roles, responsibilities and actions for SPC and other relevant organisations. The paper is intended to inform the decision-making processes of the SPC Heads of Fisheries Meeting and the CROP Marine Sector Working Group and its partners.

2. WHAT THE EAF INVOLVES

3. Conventional fisheries management aims to manage human activity in order to maximise fisheries production, economic benefits, employment or national revenues. The EAF focusses not only on these aspects, but also on maximising a broader range of ecosystem services and functions, in order to provide a greater array of human benefits, maintain alternative development options, ensure that coastal ecosystems are sufficiently resilient to withstand other stresses, and guarantee long-term resource sustainability.

4. Some important principles in the application of the EAF include:

- not allowing fishing operations to cause undue disruption or damage to ecosystems through overfishing, depletion of non-target species, habitat damage or pollution;
- ensuring ecosystems are kept in a healthy and resilient state so that they can endure unexpected environmental and other shocks;
- improving compliance with fishery management measures through greater stakeholder engagement;
- recognising alternative values of marine resources (such as recreation and tourism) other than just the extractive ones.

5. In practice, implementation of the EAF will require PICTs to:

- scale back unrealistic expectations of the amounts that coastal fisheries can produce;
- apply a conservative, precautionary approach to fisheries management;
- set aside reserves or protected areas to increase ecosystem resilience;
- promote more stakeholder participation in fishery management arrangements;
- establish rights-based methods of fishery management, instead of open-access 'free for all' arrangements;
- establish integrated coastal management arrangements that involve many sectors, not just fisheries.

6. Coastal development is a major issue in the region and its impacts on inshore environments and the fisheries they support are widespread and growing. Land-based causes of damage to coastal ecosystems include construction of buildings, roads and seawalls, sewage and waste disposal, pollutants from industry and agriculture, sedimentation and freshwater influx due to poor land management, and other sources. There is a need to adopt integrated coastal management (ICM) approaches in many situations in order to reduce these impacts on coastal habitats and the fisheries they support. Important features of ICM arrangements – some of which are now being put in place in some countries – will include:

- policy initiatives at the higher levels of local and national government;
- improved integration ('horizontal coordination') between sectors and disciplines;
- geographically-oriented site management programmes that take account of all sectors impacting on coastal environments.

7. ICM and the EAF are complementary and if implemented together will greatly assist in the move towards sustainable management and use of coastal ecosystems. Both approaches will necessarily involve a wide range of stakeholders, including a range of government agencies.

8. The EAF need not be inconsistent with, or a replacement for, current fisheries management approaches in PICTs, but represents an improvement that takes into account the impacts of fisheries on the broader environment and, conversely, the impacts of other sectors on fisheries. Nor is it a goal in itself: the EAF is basically a set of principles and tools intended to result in improved management of fisheries and ecosystems.

3. REGIONAL COMMITMENTS TO THE EAF

9. A wide range of international treaties and conventions commit PICTs to the adoption and implementation of the EAF. Most of the principles and conceptual elements of the EAF are already contained in binding or voluntary agreements, global or regional conventions, and codes of practice of direct or indirect relevance to fisheries. These include the 1971 Ramsar Convention on Wetlands of International Importance, the 1982 UN Convention on the Law of the Sea (UNCLOS), the 1992 United Nations Convention on Environment and Development (UNCED), the 1992 United Nations Convention on Biological Diversity (CBD), the 1995 FAO Code of Conduct For Responsible Fisheries (CCRF), and the 1995 Jakarta Mandate on Marine and Coastal Biological Diversity, a subsidiary instrument of the CBD. The Pacific Islands Regional Ocean Policy (PIROP), as well as the 38th Forum Communiqué and the Associated 2007 Vava'u Declaration ('Our Fish, Our Future') both articulate principles and actions that are consistent with the EAF. The Implementation Plan for the World Symposium on Sustainable Development urges UN member countries to make significant progress to implementing the EAF by the year 2010.

10. At the technical level, the 4th and 5th SPC Heads of Fisheries Meetings (Noumea, August-September 2004, and Noumea, April 2006, respectively) re-stated their commitments to implementing the EAF in the region by 2010. The Special Session of the Heads of Fisheries Meeting, held in Apia (Samoa) in February 2008, endorsed the 'Apia Policy' Pacific Islands Regional Coastal Fisheries Management Policy And Strategic Actions (2008-2013), which in itself emphasises the importance of the EAF.

4. CURRENT STATUS OF THE ECOSYSTEM APPROACH TO COASTAL FISHERIES AND AQUACULTURE IN PICTS

11. Implementation of the ecosystem approach to coastal fisheries and aquaculture is progressing in the region, but only at a moderate pace. At present, few if any PICTs have enacted laws or declared policies that commit them to implementing the EAF. To do this would require revision of legislation in most PICTs. Strategic planning and policy development in support of the EAF is weak, and many countries experience problems of insufficient political interest or will, lack of relevant technical knowledge, poor inter-agency collaboration, and institutional inertia.

12. Despite this, however, many PICTs have implemented fisheries and aquaculture management measures that are compliant with the EAF, and which are assisting in its implementation in a de facto manner. Such measures include:

- the promotion of community-based management (CBM) or co-management arrangements;
- establishment of marine protected areas (MPAs) and marine managed areas (MMAs);
- fishery development activities that divert fishing pressure away from over-exploited resources; and
- technical measures intended to protect and conserve fish stocks.

13. Further progress in implementing the EAF will require strengthening and expansion of these activities, development of better research and data collection systems to ensure that management is monitored and adapted as needed, and the improvement of human and institutional capacities in support of these changes. However the EAF is a management process, not a research process, and EAF implementation can still proceed in data poor situations. EAF implementation should not be deferred until more data is available, otherwise there is a strong likelihood that it will never commence. Continued emphasis will need to be placed on the use of CBM, co-management and other participatory management arrangements, use of MMAs or other mechanisms for enhancing ecosystem resilience, and scaling back over-ambitious expectations in regard to fishery harvests and development prospects.

14. Land-based development is a major issue in the region and its impacts on coastal environments are widespread and growing. Many factors that negatively affect marine ecosystems are under the control of government bodies other than fisheries agencies. In some countries attempts are being made to mitigate the degradation of the marine environment caused by coastal development, and to overcome institutional barriers to better coastal management, by establishing inter-agency committees and working groups. However, as noted earlier, there is a need to adopt stronger ICM approaches in most cases, and this should go hand-in-hand with implementation of the EAF.

5. STRATEGIES FOR FURTHER IMPLEMENTATION

15. Bearing in mind that all PICTs are different, some possible strategies that national fisheries and other relevant agencies can adopt to apply the EAF include the following:

- encourage and lobby for changes to legislation, regulations or policy which formally adopt the principles of the EAF;

- promote integrated coastal management by establishing inter-sectoral committees to discuss and address the impacts of non-fishing activities on marine resources. Informal committees or memoranda of agreement are a good starting point and can be progressively formalised. Because fisheries is the 'downstream' sector, being impacted by many other activities, fisheries agencies have both a right and a responsibility to be pro-active in pushing for better inter-sectoral cooperation and coordination;
- develop processes of environmental examination and impact assessment (EIA) for all activities that may have an effect on the coastal environment, including appropriate capacity-building and training programmes. Establish legal requirements for EIA on all such activities. Ensure that fisheries agencies are involved in carrying out or reviewing the EIA, and have the opportunity to require modifications to the proposed development, or, if necessary, prevent it;
- where they do not exist, develop fishery management plans (FMPs) for major coastal fisheries and, where appropriate, for aquaculture. Progressively mediate the transition of FMPs into Fishery Ecosystem Plans (FEPs), which are FMPs that have been expanded to take into account a broader range of ecosystem considerations.
- establish appropriate stakeholder consultative processes for each FMP/ FEP. Stakeholders typically involve the fisheries agency, industry and resource users;
- promote community-based fisheries management or co-management approaches wherever feasible. CBM can be identified as a primary ecosystem management tool within FMPs/ FEPs. Community-level management plans can flow from the FMP/ FEP, illustrating the need/ usefulness of managing ecosystems at different scales;
- review FMPs/ FEPs periodically, progressively introducing ecosystem considerations in line with the needs of the fishery, the stakeholder base and the capacity of the fisheries administration;
- FMPs/ FEPs should progressively begin to address non-conventional management problems and involve a wider range of stakeholders;
- gather information. Information requirements, and the way the information will be used, should be specified in the FMP/ FEP;
- establish marine protected or managed areas, preferably through community-based arrangements, with clear fisheries and/ or ecosystem management objectives, and backed up by appropriate legislation and regulation;
- consider alternative livelihood or income-generating strategies that may be needed to support fishers whose short-term interests may suffer as a result of management actions;
- undertake or commission research to characterise and describe the components of the ecosystem being managed, and their inter-relationships (but noting the high cost and complexity of such research). Obtain relevant research results from other countries where possible, and use the results to progressively improve FMPs/ FEPs.

16. The combination of approaches to be followed will depend on the specific circumstances, goals and resources of the country or territory in question. Many PICTs have already taken some of these steps. Even where this is not the case, most PICTs should be able to implement at least some of the above measures by 2010. Moving towards the EAF will be an incremental process, taken in steps which may at times be small and slow.

17. There will be significant differences between the way that the EAF is implemented in PICTs and in developed countries. Limitations of human capacity and financial and technical resources will mean that the EAF in PICTs will probably be based on adaptive approaches which aim to maintain habitat health, trophic levels or other pre-determined measures, rather than on comprehensive ecosystem science. Although much of the literature on the EAF emphasises the need for strong ecosystem science and fishery data, many EAF principles can be – and have been – applied in the absence of such science and data. This is particularly true in the case of artisanal or community fisheries, where management decisions can be made based on other forms of information and knowledge. The SPC Workshop on the EAF, held in November 2007, noted that the EAF should be a management process, not a research process.

6. EXTERNAL SUPPORT TO IMPLEMENTING THE EAF IN PICTS.

18. Several international and regional, inter-governmental and non-government agencies have been active in supporting PICTs' efforts to implement the EAF, and are keen to continue, but in some cases are still contemplating their strategies for doing so. Possible ways in which these agencies could contribute to the process depends on the specific needs of each country, but could include:

- national workshops to introduce EAF concepts to fishery stakeholders, and explore initial approaches to EAF and ICM implementation in selected fisheries/ situations. These could be modelled on the approach already taken by FFA in regard to national tuna fishery management planning;
- technical assistance and training in the fields of legislation/ policy formulation, development of FMPs/ FEPs, resource assessment, ecosystem monitoring, water quality monitoring, establishment of consultative mechanisms, identification and establishment of MPAs, and ecosystem-based spatial planning;
- support to the establishment of national or local committees or working groups covering all stakeholders and looking at coastal management issues, including fisheries, in a holistic manner;
- develop EIA templates and procedures specifically for activities having an impact on coastal fisheries and ecosystems, and supported by appropriate training;
- independent audit of fishery management policies and plans to ensure EAF compliance;
- support to pilot/ demonstration projects in selected situations to demonstrate the process and applications of the EAF. The critical state of the sea cucumber resource in many PICTs makes it an ideal candidate for a multi-country project aimed at restoring the economic, social and ecosystem benefits from this fishery;
- advice, training and capacity building in regard to coastal fishery and ecosystem data collection and monitoring arrangements;
- develop and run tertiary courses on the EAF and ICM within universities servicing PICTs, where possible incorporating them into fisheries training diplomas and degrees;
- establish a 'meta-database' of coastal fisheries and ecosystem monitoring and research information – a publicly available repository of shared information which could be accessed by EAF practitioners in the region – supported by appropriate training in its application and in-country use;

- establish a regional policy and technical working group on EAF to allow senior-level information exchange, sharing of common problems, and collaborative approaches to fund-raising;
- continued promotion of CBM arrangements;
- assistance with the design and establishment of MPAs and MMAs specifically for fisheries management purposes.

19. This does not pretend to be an exhaustive list of options, but a set of possible approaches each of which might be applicable to several PICTs. Some of these initiatives are already embodied in the plans of different regional and international agencies and NGOs. For example funding proposals being developed by SPC, SOPAC and other CROP agencies encompass the idea of a data repository on coastal fisheries and ecosystems.

7. CHALLENGES AND OPPORTUNITIES

20. Implementing the EAF will continue to present challenges for many PICTs, but these challenges are far from insurmountable, and can be addressed progressively, one step at a time. Many of the difficulties the EAF presents are not new, and already apply to a wide range of governance improvements that require changes in government agencies, policies and management arrangements, particularly where stakeholders may feel their interests are being threatened. There are strong parallels between the EAF and the ICM processes, in that a major challenge for both is the need to bring together a wide range of stakeholders with different (and sometimes conflicting) mandates or interests, and persuade them to agree on mutually acceptable goals and management approaches.

21. The EAF nevertheless provides an opportunity for PICTs to break away from more conventional and perhaps outdated single-species oriented approaches to fisheries management. It permits PICTs to move towards coastal fishery and aquaculture ecosystem management arrangements that are more compatible with the 'Pacific Way', contributing more effectively to the maintenance of livelihoods, lifestyles and ecosystem services than conventional fishery management systems have done. Many EAF principles are in line with traditional and customary ways of doing things in the Pacific, such as area-based approaches to land and sea management, avoidance of sectoral specialisations, greater local participation in decision-making, and recognition of the non-commercial values and benefits that coastal resources and ecosystems can yield.

22. Implementation of the EAF in the region will take place progressively, perhaps in very small steps, and perhaps over a relatively long period of time. Eventually, however, a 'tipping point' will be reached where the EAF becomes the norm rather than the exception. A parallel exists in the trend that has been observed over the past 20 years from the 'get more fish' approach of fisheries development, to the focus on improved fisheries management, CBM and MMAs that dominates the fisheries scene in PICTs today. Implementation of the EAF is a continuation of the same trend towards achieving sustainable fisheries management.