Introduction

The ecosystem approach - a rhetoric concept or disguise of guilt. The art of managing fisheries has taken many turns. Recently, global attention has focused on the adoption of the ecosystem approach. Although there is much critique and debate on its central functions, the concept presents modern fisheries management regimes with fresh holistic insights towards correcting failed fisheries. The ‘ecosystem-based management’ is now a recurring priority item in global fisheries agendas and has gained much attention. It now influences management and policy decisions amongst regional fisheries management organizations (RFMOs), fisheries managers and scientists as well funding institutions and external actors.

The members of the Pacific Islands Forum Fisheries Agency (FFA) have now agreed to apply the concept to managing tuna fisheries within their national jurisdictions. However, there are significant implementation issues and challenges that are yet to be fully addressed. A real test in general terms of such commonly introduced concepts and initiatives is the practical ramifications, acceptance and effective implementation at the local stakeholders’ level. There are significant challenges relating to the disparate levels of fisheries developments implemented, and policy instruments available amongst FFA 17 member countries and territories. Unlike the high island countries, for instance, the poor level of domestic tuna fisheries developments in low-lying atoll countries is partly explained by the lack of resources and capacity, limited opportunities and alternative developmental means. As such, there needs a harmonized and strategic approach towards the implementation of the ecosystem approach.

Fisheries continue to rank relatively high in national and regional agendas. It is not only because of cultural significance of the seas to Pacific peoples. However, in the face of globalization, Small Island States of the Pacific continue to fall back on their ocean resources for protein sustenance, alternative earnings, trade and transportation means. These oceanic resources are worth billions of dollars, but, these values degrade with unsustainable management and poor policy decisions towards use and functions of attributes in the mosaic of the marine ecological system. This realization of anthropogenic impacts and consequences on the resources remain a key challenge amongst resource managers, scientists and policy makers towards sustainable management. During the turn of the 21st century, this
has been an area of great interest to all interested stakeholders and Pacific Islands, as the challenge of elevated fishing pressure and over-fishing mounts against increasing demand for economic benefits and development aspirations.

The ecosystem approach to fisheries management is one management tool resource managers and scientists believe may work in addressing indiscriminate exploitation of resources and other influences on other species and the environment. The tool is by no means a perfect solution to fisheries and fishing problems. But it provides relevant links to explaining in some levels of details, with the availability of data and information, the interchanges and inter-linkages of various attributes. This means that in a given ‘fishery’ there are indeed attributes that forms the entire mosaic and any imbalance can have repercussions across many attributes, particularly during excessive impact (exploitation) on one attribute.

In a nutshell, the ecosystem concept puts into perspectives the issues and inter-relationships amongst each other. One advantage is the ability to holistically address issues affecting resource, resource user and associated environment. The difficulty however is that not all the data and information is often available to usefully assess the mosaic of issues in any given ‘fishery’. While research is encouraged to collect sufficient data needed for analytical work, the end results do not often become available during urgent policy and management decisions. Sometimes, it takes many years of research and data collection to make any sense out of management challenges and, to properly understand the attributes and the linkages. This challenge is paramount at the country level through implementation of policy decisions that deal with the mobility nature of regional tuna stocks. The challenge becomes particularly critical when decisions are forced into finalizations without the availability of sound data and scientific information. Some scholars refer to this as ‘data less management’ – a concept disputed in the scientific community, however often used by managers in the absence of scientific data.

This leads to the core of the problem in addressing key implementation challenges amongst the FFA member countries and territory. In tuna fisheries, the fundamental challenge is balancing development aspirations and sustainability issues with ecosystem and by-catch concerns. The challenge therefore rests on the balance between management option agreed and influenced by external actors, and realistic concerns of the implication at the national level. Nonetheless, the debate surrounding this continues and becoming an underlying priority agenda item in the Western and Central Pacific Fisheries Commission (WCPFC) and other regional fisheries forums. This chapter investigates the ecosystem approach to tuna fisheries in its practical application and implementation among vulnerable

1 MRAG, 2002.
economies of Pacific Island countries and territories (PICTs). It also presents a suite of strategic directions in overcoming those implementation challenges.

Implementation Challenges and Lessons

The implementation challenges and lessons are discussed predominantly in the process of FFA Ecosystem Approach to Fisheries Management (EAFM) work amongst its members. These challenges include development processes on logistical arrangement constraints, workshop approach and materials, lack of wider stakeholder participation, conflicting opinions amongst stakeholder groups and with government, and post EAFM follow up and practical implementation. In the FFA EAFM framework, there are limited experiences in regard to the post EAFM work given at least only four countries have gone through the process to completion. An additional two countries have just recently completed this process and production of EAFM reports.

Development Process

The challenges vary from one country to the next, depending on the number of ‘fisheries’ under investigation. The consultations are carried out using a participatory process with a focus to encourage free discussion amongst the stakeholders on issues pertinent to the fishing industry. The process also influences the discussion to reflect on a range of issues from different perspectives of user groups. In essence, the challenges specifically rest on the conduct of stakeholder consultations, quality and quantity of materials formerly presented and disseminated, working group deliberations, and as well as facilitation support from key resource persons.

In order to fully comprehend the extent of the above challenging areas, it is crucial to highlight the details for further scrutiny. The details are well documented and also found in the EAFM Guide; the latter of which is now in its fifth revision. Below is a revised summary of the lessons and observations gathered from series of stakeholder workshops and consultations as outlined in Sauni and Amos.

Conduct/ Planning of Stakeholder Consultations

All in-country EAFM work is coordinated and managed by the FFA Secretariat, in consultation with resource persons from the Secretariat of the Pacific Community (SPC) and expert consultants. There are at least three separate in-country workshops conducted independent of each other; initially with a scoping

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2 Fletcher et al., 2005.
3 Fletcher, 2008.
4 Sauni and Amos, 2007a, 2007b.
workshop, followed by stakeholder consultations and finally the presentation and expert discussion panel of the EAFM report. The exact timing of the workshops is determined by mutual agreement between host country and resource persons, at a time that best suits the schedules of fisheries personnel and stakeholder participants.

In most cases, it was difficult to establish a suitable time for workshops that is conveniently acceptable by everyone. In response, the FFA Secretariat in collaboration with the host country undertakes advance informal arrangements with tentative dates of such activities; and progressively finalizes the exact dates toward the deadlines. This would give advance notice to attract key relevant stakeholders and make necessary preparations for the meetings. The process is through collaborative efforts between FFA (including resource persons from SPC and consulting firms) and the host country (local fisheries administration). When this fails due to the unavailability of resource persons and stakeholders, a specific date is set with priority given to availability of stakeholders’ in-country.

The increasing number of meetings that fisheries stakeholders and regional officials attend in a year is an influencing factor. Having EAFM meetings included in annual work plans at the beginning of each calendar year, is a good possibility. For most administrations and FFA, provisional meeting lists and work plans are normally available for quick reference towards the end of each year.

Workshop Materials

As described in the FFA EAFM Guide, resource persons prepare relevant but concise materials for each subject area. Additional background materials are also provided during the workshops. These relate to tuna fisheries in country, either in their original report form or compiled from information summaries. The presentations are often organized to introduce all the elements of the FFA EAFM Framework, highlighting the main stages and processes and with reference to examples. Also, brief presentations are prepared on the state of tuna resources, legal aspects and domestic fisheries perspectives.

The FFA Secretariat normally assesses the relevance and quality of materials used in the workshops. It is often a problem that the quality and amount of materials prepared may be too technical and voluminous. This, in turn, affects the ability of local participants to fully understand in order to prepare them well for group discussions. The workshop materials are sent electronically to host fisheries departments for further dissemination to participants, well in advance of the meetings.

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5 Fletcher, 2008.
Working Group Exercises

A participatory process is adopted through working group exercises. Against each element of the EAFM, the groups are tasked to produce outputs, component trees of issues, risk assessment matrices (including prioritization of issues), and presentation of results. The group exercises are planned for each scoping and stakeholder consultation sessions, with the aim of systematically working through the issues and producing reporting matrices required for the EAFM report.

The main challenge rests on coordinating group discussions, ensuring there are no misunderstandings of EAFM and that issues are fairly debated, particularly where limited quantitative information is available to guide deliberations. In most cases, experiences were shared against each of the issues raised which often identified possible solutions (or mix of solutions) that were considered most appropriate from the participants’ perspectives and experiences. However, it becomes a problem if there are significant differences of opinions on issues, especially between government and industry participants.

Sometimes the disparity of views also occurs within government and private sector agencies representatives. In moderating the discussion, facilitators often make inferences or references of similar situations that occur in other countries. Also, real case studies and reliable information are explained to group participants over certain issues. The aim is to add value and have a focused discussion that could generate further insights into understanding the underlying causes and impacts of the issue(s). One major shortfall of working group exercises, depending on the amount and extent of issues being debated, is the limited time for each working group session. As well, the lack of participation from key stakeholders is a constraint in this participatory process.

Facilitation Role

The role of facilitators may not be challenging. But the cause of concern relates more to instances where there is confusion and contradictions arise over interpretation and/or understanding the EAFM processes. Similarly, a situation may surface where facilitators debate the issues profusely, and discussions enter into questioning of each other’s level of understanding over certain issues or aspects of the FFA EAFM process.

This can been caused by the lack of briefing and exchange of understanding over the process and other matters prior to the meetings. It is also possible that the problem is due to the lack of effective coordination by the FFA Secretariat to ensuring all facilitators understand their specific roles during the meetings.
Another way to curb this is to ensure everyone understands the EAFM processes, despite its limitations in some aspects. The aim is to encourage effective discussion amongst stakeholders and to achieve key outputs relevant for the EAFM report. The primary aim of the workshops is to encourage effective stakeholder participation, and to gather as much as possible feedback and inputs from stakeholders themselves.

Post EAFM Challenges

The formal process of developing EAFM reports ends during the final submission report to member countries. The stages of working towards an operational plan and legal framework under the EAFM process are the prerogative of member countries. These plans are brief and cover the implementation schedule that focus predominantly on the management reports section of the EAFM report. They describe in detail the management actions for each specific medium and high priority risk issues identified in the EAFM report. This covers the main headers of manpower resources, funding resources, timelines and reviews; and spreading across main areas of ecology, environment and socio-economic.

Progressing these stages further requires political will and support to ensure this work is adequately implemented, and that external technical assistance can be sought. Sauni and Amos\(^6\) outline a number of challenges which are further updated below:

Stakeholders’ Understanding

Stakeholders lack an awareness of current information on the stocks and efforts currently in place, and the various inter-agency relationships and mandates. This is partly explained by the relevant information not necessarily filtering down to stakeholders. This is further exacerbated by sensitivities on some fisheries issues particularly in the areas of socio-economics and administration and governance. There is also confusion over priority issues, driven either by the lack of data to support the issues or the lack of clarity of national policies and priorities on fisheries. There are, in some countries, conflicts between agency responsibilities over tuna fisheries, particularly where more than one agency deals with tuna related matters. The ability to identify and address such governance related issues is one of the key benefits of the EAFM approach.

Institutional Structural Changes

Institutional structural changes can also create obstacles. For example, the departure of skilled staff, re-shuffling and reforming of fisheries agencies (e.g.

\(^6\) Sauni and Amos, 2007a, 2007b.
changes from department of ministry type model to fisheries authorities, or vice versa) further complicate matters in effective management of tuna fisheries. In the consultations, the stakeholders often raise concerns that numerous Tuna Management Plans in the past were not fully implemented. There were few consultations and key stakeholders did not participate fully in the development process of the plans, and that these plans were not circulated widely and that people lack awareness of it. Also, there is a sense of participants protecting their interests by way of their contributions to the discussion. Some countries point to the lack of political will and government interventions, corruption as well as the lack of financial and technical support to implement tuna management plans.

**Stakeholder Exchanges**

The above experiences add to the difficulty to coordinate in-country EAFM consultations. However, the process encourages participants to raise those issues in EAFM national workshops. These issues are then assessed succinctly through the prioritization and risk assessment steps in order to arrive at possible management responses. In most cases, new ideas and proposals flagged during the consultations present new opportunities for government officials in decision making positions to follow such actions through to full implementation. Similarly, the discussion also benefits stakeholders in the private sector to take on the new challenges in the fishing industry. These stakeholder exchanges require thorough understanding to address ongoing issues with fisheries authorities as well as implementing management responses within their own fishing businesses.

**Political Will and Support**

In almost all EAFM stakeholder consultations, there exists relevant informal debate and conflict of ideas and opinions, between the formal and informal sectors in the tuna industry. The industry stakeholders often argue on the lack of financial, technical and logistical support or provision of essential services from the government to foster sustainable and profitable onshore developments. The issues of government subsidy and relevant technical information and materials filtering down to industry stakeholders are often limited. For example, the industry stakeholders often request governments implement duty free or imposition of tax exemptions on fuel, oil, spare parts and other accessories commonly used by domestic tuna fleets. Also, there exists a lack of proper and adequate onshore facilities like fuel depot, wharf facility and berthing area, and skilled skippers and crews (which often results in the employment of foreign crews).
Infrastructure Support Services

However, during national EAFM consultations, the national governments counter-argue that there are current national and regional initiatives and projects in place that look into alternative and better means of developing tuna fisheries in the private sector. But first, government officials argue the need to have feasibility studies and related accounts of the major challenges and constraints, explore and identify development opportunities, develop or review strategic management and development plans and policy documentations and the implementation the plans. In more general terms, the government adopts and implements policies that are holistic and broadly addressing sustainability, economics and social issues and development aspirations of the country.

In knowing the state of the tuna resources and its environment, and development opportunities against the challenges and constraints, strategic responses to key issues experienced in the industry would be effectively addressed. This includes the construction or improvement of onshore-based facilities and services, allocation of licenses and related control limits, application of technical specifications on boats, use of monitoring, control and surveillance mechanisms, analyses on the use of subsidies and exemptions, as well as other incentives to encourage effective, sustainable and profitable management of domestic tuna fisheries. All these elements provide the basis for developing national EAFM reports that incorporates all the components of ecological, ecosystem, social and economic aspects of the tuna industry.

Evolving EAFM Process

In addition, national EAFM workshops and consultations further provide opportunities for improvements in the conduct and preparation of EAFM reports, Operational Plan, Legal framework and Policy platform and other related documentation. For instance, some lessons learnt in the process includes: keeping the EAFM report concise and short; improving the delivery of risk assessments for clarity among the participants; and encourage the use of non-technical languages during the consultations – possibly by engaging national fisheries officials. There is also a need for clear demarcation of jurisdictions between inshore and offshore fisheries, flexibility in approach, and linking the debate of issues to WCFC decisions, provision of workshop materials in advance, ensure local stakeholders drive the EAFM process and encourage local ownership of the EAFM reports.

Effective EAFM Challenges Amongst PICTs

The real test to the EAFM approach in the FFA framework is how best it can be adopted and implemented successfully. While the holistic management approach
is clear, the practical consequences of implementation remain a challenge. With
the small sizes of fisheries administrations, lack of resources and capacity to deal
with current issues, any additional management requirements would certainly
require additional flow of resources and commitment. The diverse national
policies and development aspirations relative to tuna fisheries amongst PICTs,
which may often change with any change of governments, would further
complicate progress in implementing EAFM. These key challenges are interrelated
and are further discussed below.7

Ecosystem Approach - A Rhetoric Concept or Disguise of Guilt

A track record exists on failed fisheries developments in PICTs and the intensity
of such failures potentially varies between countries. Amongst others, the key
attributes are discussed earlier in the chapter; however ranging from institutional
structures, governance, political support, stable investment environment and
policies, lack of resources and capacity, stakeholders’ participation and others. The
ecosystem approach through the EAFM process is a holistic management tool,
which strategically identifies and suggests management actions to address priority
risk issues.

On the one hand, it can be described a ‘rhetoric concept’ given the high command
of attention and global acceptance as one effective fisheries management tool to
address failed fisheries. On the other hand, it is a disguise of guilt on fisheries
experts for failing in their application of conventional fisheries management.
Generally conventional fisheries management has failed in the past, and the
EAFM process may correct such failures by accounting for the
interrelationship/inter-linkages of systems through roles and attributes in a true
setting of mosaic of ecological systems.

Lack/Shortage of Human and Financial Resources

The lack of skilled manpower and financial resources to implement policies and
pursue legitimate fisheries developments are key elements which PICTs are still
struggling to overcome. Failing this may lead to EAFM reports not effectively
implemented, thus not achieving its intended use. Funding support is a common
problem in fisheries developments throughout Pacific Island countries despite the
millions of dollars worth of tuna resources in the Western and Central Pacific
Ocean (WCPO). The bulk of funds from licensing and catches are channeled to
government consolidated funds, and a small portion of which is used for fisheries
management and development purposes in fisheries authorities. The general
feeling in attitudes on the allocation of such funds has not been commensurate to
the contribution of tuna fisheries in national GDPs and economies.

7 Also see Ferraris, 2007.
There are nonetheless, strenuous efforts to address this and there have been successes in some PICTs. There are pressures in government where the allocation of fisheries funds is disputed, regardless of its share in national gross domestic product (GDP), and elements of corruption from fishing companies to gain access. This can result in uncontrolled fishing beyond maximum sustainable yield levels.

The availability of skilled and ample staff in fisheries administrations vary greatly between PICTs. Over the years, this issue has been greatly addressed by the number of qualified and skilled graduates joining fisheries administrations. However, it would generally require time to build up experiences and, some of which are already holding influential and senior positions in countries. Also, the high turn over in skilled staff, career attractiveness and financial packages on offer influence retention of skilled staff.

Lack of access to finance to promote domestic fisheries development is lacking in most PICTs. In part, the lack of certainty over catch rates, and thus, future economic viability of domestic fishing fleets, seriously inhibits investment in domestic fisheries development. National development banks and financial institutions are very cautious about loaning investors the necessary capital to promote domestic industry development. In many cases, the same concerns exist at the Ministerial level, which creates difficulties in getting government support for domestic tuna fisheries development initiatives.

**Competent Industry Groups and Effective Participation**

No doubt the need for skilled and qualified personnel also extends to the fishing industry. Across PICTs there generally exists the lack of fisheries managerial and business skills, and broad understanding of stock assessments. This has led, in some instances, to failure and bankruptcy in some domestic fishing companies. Until such time, the growing capability and capacity amongst fishing industry groups is needed to improve the support towards effective decision making. This may lead on to the government regimes providing explicit allocation decisions between stakeholder groups. This relationship is crucial to advance the collection of fishery dependent data (spatio-temporal scale of catch and effort data) in the capture sector.

The devolution of decision making within the EAFM process to industry groups is paramount towards greater focus on fishing capture and processing sectors. Similarly the long term impact on the EAFM process would be a bonus giving competent stakeholders to implementing and managing sustainable fisheries. The importance of engaging industry is to reduce management cost and at the same time maximise benefits. For instance, in some countries, the fishing industry link
directly to commercial and recreational sectors and subsequently exerts impact on the environment.

Governance

Unless transparency, accountability and good governance are upheld it would be extremely difficult to have a successful ecosystem approach to fisheries management. The resource rents generated from the resources are commonly prone to corrupt activities. In the private sector it lacks stewards and investors have in some cases lost confidence in investing in PICTs. The short term outlook is that many players want access and invest in the resources. The response to these challenges is to reform and strengthen fisheries institutions.

Fisheries institutional reforms and strengthening often link to good fisheries legislation and are based on ecosystem principles (including precautionary) and clear objectives – a paramount requirement for good governance. In addition there may be merits in exercising flexibility in the delegation to fisheries management and arrangements, and provide a power base to enter into institutional fisheries management plans. Also, it is important to revise management and statutory plans to reflect emerging fisheries issues and challenges.

Stable Investment Policy Environment

Getting the policy environment right is fundamental and should be based on a vision that focuses on good policy, law and management. In fisheries, it requires a legislative policy that is supported by whole-of-government fisheries policy. The sequence level of policy, law and management can be built concurrently and be flexible to changes in the political climate. It is also important to design the right policy that avoids the emergence of continuous problems in fisheries development projects. A common recurring issue is that initial designs of policies or projects are carried out by one or group of people (or consultants) but implemented by others. A greater relationship between design and implementation of fisheries programs is needed.

In PICTs investment needs to be tailored towards genuine fisheries opportunities, as well as exploring other investment opportunities that underpin fishing operations. It may not be just developing domestic fishing fleets in the capture sector but also on processing and provision of services (e.g. fuel, repair and transshipment). Sometimes it takes legitimate need for a good vision, policy and good staffing to be able to convince foreign investment in country. This includes the undertaking of fisheries reforms and strengthening exercises and that, any transitions or implementation of new changes would need to handle swiftly. PICTs
may wish to undertake reforms that should aim towards creating a stable and attractive investment location and policies, for example:

- reforming tax systems;
- lowering barriers to trade (tariff and non-tariff barriers); and
- invest on human capital through education and training.

In 2007, FFA members raised the need to create a stable and attractive investment environment for businesses to invest in domestic fisheries development. This can be addressed at both the national and sub-regional levels. It initially requires a stable policy environment at the national level and that PICTs may wish to limit the number of vessels allowed to enter the domestic fishery and fish in national waters. This means that large numbers of vessels will not enter the fishery in the future to compete with existing businesses for a share of the catch. Also, in order to stabilize fishing operations and investments, countries may opt for longer term licensing for domestic fleets. For example, the preference of longer licensing period such as three years instead of annual licenses.

Institutional Gaps

Given the broad element in the EAFM process there is a need for inter-agency relationship and collaboration. The agencies need to agree and keep well informed on the process to ensure smooth execution of activities that may require inputs from various agencies. Failing this may lead to failure in any undertakings in the EAFM process. The agencies involved need convincing and understanding on the work and the relevant details as to why they are pursuing such EAFM work.

Furthermore, the ‘one stop approach’ brings together relevant government agencies dealing with fishing and fisheries. This approach will successfully bridge the gaps across finance, customs, transport and social services agencies. The finance agency often imposes tax on fuel, customs dealing with papers on export and workers, flights increase to cover more travelers and goods for export and imports. Also there are social issues in the fishing industry that link to prostitution. Because there is money involved, inter-agency officials sometimes turn a blind eye to the issue, perhaps influenced by the lack of interest and motivation. The inter-agency working groups that were set up to address common issues lack competence and willingness to perform their roles efficiently.

In order to have significant changes, as an outcome of the EAFM process, it requires pursuing success in inter-agency collaboration and nominated working groups. This should work towards addressing minor problems and other priority issues, and also motivating officials dealing with fisheries matters.
Any form of institutional reforms would cost a lot. However, this reflects the key changes that are necessary to establish appropriate institutional models that deliver the necessary output levels anticipated from the fishing industry. Factors in the success or failure of any institutional strengthening and reform work include the critical level of career structure, the effectiveness of reformed fisheries activities, issues of corruption, efficiency in the workforce and ensuring the generation of maximum benefits in the overall fishing industry.

Political Will
The EAFM requires commitment and political will to carry it forward. Given the broad range of issues and management actions that are flagged in the EAFM report, it is important to have political backing for implementation. In this region, the collapse of fisheries development projects when funding and technical assistance terminates or projects close down remain a challenge amongst fisheries managers. While, there may be short term benefits realized in the duration of the projects, the long term benefits at the termination do not necessary continue. The lessons are the lack of continuity backed by support from key stakeholders and agencies, downgrading of individual work performances of project counterparts. There is a need for ‘champions’ in influential positions, recognizing the risk in putting all hopes in one individual. The lesson was that ensuring sustainability in development projects requires people of high profile and respect on the ground to ensure effective implementation.

Many PICTs have serious constraints on their capacity to promote development in their domestic fisheries. This is simply because of their small administrations and small number of staff that are allocated to handle fisheries related issues. Also, there are limited government incentives provided in some jurisdictions to promote domestic tuna fishery development. In part this may relate to perceived failures in the past; as well as perceived achievements of domestic fisheries development. Also, fisheries and fishing may have ranked low in some government priorities.

Changing Priorities
PICTs have come a long way in the evolution of fisheries. The most important change is the transitional and gradual re-focus on objectives from maximizing economic benefits to adopting conservation and management approach – the EAFM process. The cross dramatic changes were strategic and systematic, such as the core change in administration and management to better improve fisheries structure and relevant skills. Some of the changing priorities are:

- the element of security access is important in the overall fisheries management, particularly the need for incorporation in relevant fisheries
management, particularly the need for incorporation in relevant fisheries
management plans and regulations;

- the primary output of the EAFM process may be difficult to achieve if there
  are frequent changing priorities in country. Policy decisions and capacity
  building are critically important areas and needed to ensure better outcomes;
- the trade offs between stakeholders is to maximize economic benefits and not
  economic efficiency, and to enforce policy decisions and not preferred
  economic indicators. The rationale is to avoid benefits being enjoyed by a
  small group of operators but to spread the benefits across the entire
  community. There is a need to build capacity within fisheries authorities and
  industry/ private sector, raise level of confidence by equal participating in
  training programs and aware raising programs. These efforts need backing up
  by the appropriate legislation framework to gain political support;
- the central focus on effective and powerful fisheries institutions is the ability
  of managing fisheries as important assets for national economies, while at the
  same time performing necessary risk assessments of fisheries operations to
  address priority pitfalls and emerging challenges; and
- the changing priorities also affect movements in skilled staff and employing
  new fisheries graduates. The lack of job opportunities, financial and political
  support to create positions in fisheries institutions also exacerbates the
  problem. Sometimes fisheries staffs with the right mix of skills and
  experiences, while initially motivated, are forced to leave given the changes in
  the working environment. The central issue in fisheries institutions is not
  necessary about the lack of capacity and resistance to changes, however the
  lack of awareness of the changes across spectrum of fisheries stakeholders.

Effective implementation of fisheries development projects are hampered by
challenges of change in government and priority policies, numerous changes in
leadership within fisheries administrations and late start of project activities. In
most cases, this leads to the re-evaluation of project activities as opposed to
allowing the project to continue into the next phase. On the one hand, PICTs
fisheries institutions require the necessary suite of skills that are urgently needed
to re-direct priorities and operations of fisheries structures. The general pattern is
clear in some countries with the drive to cut back outside influence. On the other
hand, countries exercise a more cautious and gradual process through an informal
process. The main drivers influencing such decisions vary potentially between
countries, but in consideration of other priority areas and sectors that drive
national economy of scale.

Markets & Marketing

To ensure sustainability and growth in the domestic fisheries operations, market
opportunities and incentives play a significant role. This means that access to key
markets (including Japan, US, EU) and the need to meet strict certification standards to enter these markets is fundamentally important. Access to air freight and the issues associated with geographic isolation from shipping routes, airline routes and more generally the main markets. Issues associated with the monopoly control that most airlines have in each jurisdiction complicates matters further.

*Others*

Other factors such as infrastructure, geographical isolations and transportation also provide further challenges in the successful implementation of the EAFM process. The necessary on-shore infrastructure facilities are important in the development of domestic fisheries operations. Similarly, the isolation of some PICTs and the lack of reliable transportation further hamper domestic fisheries developments in linking to potential markets abroad.

*Future Challenges*

The biggest test for the success of an EAFM is whether the strategies and measures adopted will enable the living component of the ecosystem to continue sustainably as it did prior to fishing interventions. Furthermore, how will the physical impacts of the activities of resource exploitation on the environment, and the effects of those environmental impacts on resource productivity, be dealt with together under an integrated management regime.

Due to the obvious paucity in data and scientific information and knowledge required to formulate and implement strategies under an EAFM approach, an immediate challenge is to adopt a precautionary principle approach as an integral component of the ecosystem-based fishery management regime.

Specific challenges to the EAFM approach include and directly relate to:

i) the integration of ecosystem aspects of management into a Fisheries Management Framework;

ii) the non-availability of fisheries data for non-target species;

iii) scientific surveys are expensive and time consuming;

iv) ongoing monitoring may be logistically impossible;

v) application of ecosystem-based models;

vi) capacity development needs of PICTs;

vii) traditional work on fishery assessment tends to limit its focus on the effects of fishing on target species and does not take explicit account of ecological and ecosystem considerations;

viii) implementation of the Ecosystem-based Fisheries Management Regime; and
ecosystem-based biodynamic models have not, as yet, proved themselves as management tools, but are paving the way to future implementation of ecosystem-based management of fisheries.8

Way Forward
The way forward is to effectively sell the EAFM report and its subsequent operational plan potentially to decision makers, formal and informal sectors and foreign investors as well as funding institutions. In considering the diverse issues covered and participation of stakeholders involved putting together these documents, in line with ecosystem principles, and national policies and priorities, there is good expectation of its success. Further, the documents are balanced having covered the issues linked to resources, users and the environment. As such, the ecosystem approach is neither a rhetoric concept nor disguise of guilt but it surely provides PICTs with an alternative to conventional and traditional fisheries management practices.

Fisheries reform is generally influenced by numerous factors such as culture barriers, political support or interferences, lack of skilled staff and funding support and attitudes of those directly and indirectly involved in the fishing industry. The fisheries administrations play direct role providing policy, management and development advice, as well, ensuring the sustainability of tuna stocks. It is therefore important that fisheries reforms strengthen these roles in order to provide the most cost-effective and efficient delivery of support services to the fishing industry that meets both conservation and economic goals.

There has been a regime shift in fisheries developments, physical infrastructure, fisheries organizations, management approaches, market access and opportunities in oceanic fisheries. This calls for the effective implementation of EAFM processes that account for these changes. The drive now amongst fisheries institutions and administrations is towards securing larger and more efficient fishing boats to harvest more fish. Great effort at all levels is now directed towards making informed decisions to regulate and manage tuna resources. The change in mindset of fisheries managers rests more in the management (and development) of fisheries resources. The current issues are far more complex than in the long past, which undoubtedly makes the work of fisheries managers a little more difficult and challenging. For instance, the need for stock assessments and methods used, and the need to include stakeholders in the decision making process (e.g. facilitators and mediators). The existence of challenges affecting Pacific Islands’ tuna fisheries may prolong into the future if ecosystem processes are not considered and that succinct management actions applied.

8 Fletcher, 2006.
Bibliography


