

Achieving the potential of locally managed marine areas in the South Pacific¹

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Abstract

In the Pacific Islands, ever-increasing pressures on limited natural resources are mainly the result of rapid population increases. Soon, these pressures will be exacerbated by the impacts of climate change. One key to successfully containing such pressures could be locally managed marine areas, which build on existing community strengths in traditional knowledge, customary tenure and governance, and are combined with a local awareness of the need for action. However, the success of the locally managed marine areas depends on broadening their scope so that they serve as building blocks for the integrated management of island communities. The implications of this are examined in detail.

Introduction

More than 12,000 km² in the South Pacific came under active management during an unprecedented surge in community-based coastal resource management over the last decade. This now involves more than 500 communities in 15 independent countries and territories, and includes more than 1,000 km² as “no-take” areas, and has facilitated the achievement of widespread livelihood and conservation objectives.³ The approach builds on existing community strengths in traditional knowledge, customary tenure and governance, combined with local awareness of the need for action. In most cases, the impetus is a community desire to maintain or improve livelihoods where conservation and sustainable use are concepts already embedded in traditional environmental stewardship.

The acceptance of locally managed marine areas (LMMAs) has resulted from communities’ perception of likely benefits, including recovery of natural resources, improved food security, improved governance, access to information and services, health benefits, improved security of tenure, cultural recovery, and community organisation.⁴ Perceived benefits also include the exclusion of other stakeholders from fishing areas and working with outside agencies. Communities may perceive some acceptable combination of benefits resulting from

their investment, the major one perhaps being their increased control over local resources.

Despite difficulties in quantifying the impact of LMMA approaches to livelihoods, the available information — combined with the absence or failure of alternative approaches — strongly supports community-based adaptive management as the fundamental building block of integrated island management or ecosystem approaches. Among the major innovations facilitating the spread of LMMAs have been the clusters of sites supported by regional, national and sub-national or social networks. Others include the support of agencies for simple participatory learning and action approaches, the development of more support-oriented roles by government agencies, an increased recognition of the importance of cost-effectiveness, and some development of relevant legal frameworks.

Although widespread implementation of LMMAs will result in an increase in marine protected areas (MPAs), concentrating on this alone would be costly and hard to sustain. Significant environmental or fishery benefits from more “no-take” zones are unlikely, unless communities use a greater range of management tools to address other issues in their wider fishing area and watersheds. Evidence from Fiji and Solomon Islands suggests that such integrated approaches are feasible, and that pilot-stage

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1. This article is based on Govan H. (ed) 2009. Status and potential of locally managed marine areas in the South Pacific: Meeting nature conservation and sustainable livelihood targets through wide-spread implementation of LMMAs (sponsored by SPREP/WWF/WorldFish-Reefbase/CRISP), which can be downloaded from http://www.sprep.org/att/publication/000646_LMMA_report.pdf
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 3. In comparison, older models of larger, centrally planned reserves have mostly failed, such that the inclusion of some 14,000 km² of “paper parks” in national and global databases of the region must now be reviewed.
 4. Although an increased abundance of target species in closed areas has been verified quantitatively, support for other benefits is less scientific.

costs for large networks of sites could be just hundreds of dollars per community. Despite this, some conservation or science-driven approaches that continue to be implemented seem unrealistically expensive, possibly indicating a lack of emphasis on cost-effectiveness (Govan 2009).

Effective local management should be sponsored by national or provincial governments in collaboration with civil society, to develop cost-effective support and coordinate adaptive management in communities where natural resources are threatened. Collaboration is necessary to reduce costs and ensure an affordable long-term resource management strategy that is best adapted to achieving not only national commitments to protected areas, but also priorities relating to food security, resilience and adaptation to climate change.

The LMMA approach builds on local and traditional strengths in resource management that offer opportunities for conserving both the resources and the resilience of Pacific Islanders — the keys to the survival of their way of life. Incautiously attempting to either expand approaches or inject large amounts of new funding could erode the very foundation of LMMAs. As stated in 2008 by the Hon Dr Derek Sikua, Prime Minister of Solomon Islands, the “self-sufficiency of the subsistence community ... is an asset that must not be overlooked or undermined. We have a degree of self-sufficiency that provides an important protection from the risk of vulnerability.”

In this respect it is fundamentally important to understand that in hundreds of locations, communities are already actively “managing” their resources. They are identifying their own problems, making decisions and then taking actions to overcome these problems. Because this provides the basic building block for resource management and sustainable development, governments and supporting agencies should nurture this “seed” as a foundation for the more holistic management of community and national development. This will require recognising the potential of the LMMA approach and developing institutional and legal support for which there is no modern precedent. This might entail either adapting traditional institutions to suit new situations, or developing new hybrid institutions. Staff and institutions would probably require a shift in mindset toward facilitating and supporting, and simultaneously abandoning, the blind command-and-control mentality. This change is already becoming apparent in some countries.

The objectives of these approaches may be explicit, but they may also be varied and unarticulated. Communities are motivated to improve livelihoods, and this often relates to food security or improved harvests. Communities would benefit from a broader discussion of problems and root causes to ensure a wider understanding of, and local compliance with, community management decisions and actions. This may help avoid the inappropriate use of tools (e.g. MPAs) in situations where these are unlikely to have much benefit. Articulating community discussions and decisions would provide essential reference points for communities in ongoing adaptive management, and would assist in with coordinating support agencies.

This does not necessarily entail complex “management plans” — easily understood, simpler and community-appropriate planning is preferable. Plans based on more-or-less defined objectives and the ongoing evaluation of progress by communities has been termed community-based adaptive management (CBAM) (Govan 2008; Govan et al. 2008a), and are common where large-scale and long-standing management is in operation. Frequently, external agencies either trigger the review process, or are at least party to its conclusions. Therefore, CBAM may be more appropriately termed “community-based adaptive co-management”.

Management is primarily by the relevant user groups within a community, but also involves local and national institutional agencies and private stakeholders. This optimises the use of such social capital as existing (or assigned) resource rights, local governance, traditional and local information, self-interest, and self-enforcement.

A community sets priorities, establishes objectives and proposes actions based on local information. Actions are implemented and results are checked periodically.⁵ Plans represent a community agreement and are frequently straightforward, single-page documents. Results of checking (which may be scientific or perceptual) plus new information are used to review and modify the plan. This allows new information or initiatives to be incorporated (e.g. disaster preparedness or adaptation to climate change).

It is clear that community-based adaptive management is a simple and familiar concept, given its similarity to many traditional resource management approaches (Hickey 2006; Cinner et al 2007). What is relatively new, or at least not yet widely accepted,⁶ is the proposal that this approach could

5. In Fiji, about one-third of villages reportedly define quantitative goals and monitor them using more or less scientific approaches such as replicated transect surveys (Govan et al. 2008b).

6. See, for example, Johannes 1998 and the case for dataless management.

form the basis for securing the well-being of Pacific Island resources and communities.

To maximize the potential of adaptive management approaches, articulating community “plans” and regular participatory reviews of these plans should be incorporated into support strategies for all natural resource and community development initiatives. In addition, adaptive management, as “learning by doing”, should be performed not only at the community level, but also by supporting agencies, because all too often staff merely repeat the assumptions and, therefore, the mistakes of the past.

Management tools selected by communities tend to be simple to implement and enforce, and include area and/or seasonal closures, restrictions on specific fishing techniques, waste management, and restoration activities.

Experience from Fiji and elsewhere (Govan et al. 2008a) suggests that some benefits should be tangible and prompt, in order to encourage continued management. Importantly, these need not be monetary benefits, and frequently consist of local perceptions of increased stocks of certain species in closed areas.

Owing to their simplicity and cultural relevance, and to varied international pressures and interests, various forms of no-take zones are inevitable (Govan et al. 2008a). However, considerable scope exists for better tailoring these to community objectives, thereby avoiding the risk of disappointing failure and de-motivation.

Other tools that should be considered for the whole area under customary tenure include closed seasons, protecting nursery habitats and spawning aggregations, and restricting destructive practices. National regulations, once understood and adapted and applied to local problems, stand a far better chance of enforcement. The key is that rules should be both simple and easy to apply fairly.

Given that improved fisheries harvests is the prime driving force for most communities, it is urgent to ensure that appropriate fisheries-related advice is available. Conservation organisations may not be best placed to provide such advice, a weakness that could be addressed through greater engagement with national fisheries departments. A caveat applies though, because much of the fisheries management experience in the region has been driven by inappropriate Western models that are data intensive, expensive, inflexible, and totally unsuited to the context of the Pacific Islands (e.g. see Ruddle and Hickey 2008; World Bank 2000; Munro and Fakahau 1992).

Implications for larger-scale implementation

1. Using customary tenure as a management unit

Owing to the limitations of small area closures as a sole management tool, the need to manage the wider fisheries or resource impacts, and indeed the desirability of more ecosystem-wide approaches, all existing and future adaptive management should consider the possibility of including the wider tenured area in community planning. In Fiji, communities manage the entire customary fishing ground (*qoliqoli*), and examples of this approach are increasing in Samoa, Solomon Islands and Papua New Guinea (Govan et al. 2008a), suggesting that community-based management of the entire customary tenured area may be feasible where boundaries are clearly accepted. This has been restricted mostly to the marine environment, which probably reflects practitioners’ biases rather than major impediments.

It will be important to develop guidance for practitioners on working with tenure, improving the use of traditional ecological knowledge, and other related social factors in each country. The expansion of management to wider areas involves two levels of potential conflict. At the community or local level this could provoke or exacerbate existing boundary disputes. However, simple approaches to early identification and potential exclusion or buffering of such situations should be relatively easy to devise. National or central governments may be reluctant to validate local claims over what may be legally national or “crown” property. However, this should be simple to work around because the approach is restricted to “resource management”. For example, Tonga has state ownership of all coastal resources, and passed legislation allowing for progressive community-based management (Govan et al. 2008a).

2. Sizes and constancy of “no-take” zones

The ambitious global targets to achieve large proportions of protected area coverage were the origin of much support for LMMAs in the South Pacific. Significant differences between community implemented closures and protected areas exist, and these differences should be thoroughly and urgently explored before planners design national approaches to MPA coverage or sustainable development.

Although some controversy surrounds this issue (cf. Foale and Manele 2004), traditional closures or taboos are but one of many traditional resource management tools intended largely to ensure the sustainable use of resources or to sustain communities. Thus, area closures are flexible, and LMMAs

may be either occasionally or routinely harvested, and may be small enough to be optimally suited to enforcement and tenure. This is different to some Western perceptions of protected areas.

Although smaller no-take, strict reserves or closed areas are sometimes criticized as not being suited to biodiversity conservation, this overlooks the fact that smaller reserves may be better suited to the fisheries management objectives of communities, and may be more appropriate to local tenure and enforcement capability. These closures can also be important community rallying points for other aspects of management plans.

According to Halpern and Warner (2003) and the International Union for the Conservation of Nature's World Commission on Protected Areas (IUCN-WCPA 2008), the shape of a reserve designed for biodiversity conservation should minimise edge habitat and maximise the interior protected area (i.e. a large and circular shape is optimum). In contrast, for fisheries management, the type and spatial extent of the habitat bordering the MPA may be more important than size; a large size being of little benefit and greatly reducing available fishing grounds, because this influences migration or spill over.

Some community reserves are very small, and undoubtedly could achieve more community expectations if they were either larger or configured differently. CBAM affords communities the opportunity — based on either external advice, or more likely other communities' experience — to try different temporal or spatial configurations. A change in the configuration of a reserve might be adopted if it is perceived that the benefits outweigh costs, in terms of enforcement or conflict.

Similarly, community reserves are usually intended to be opened periodically to ensure that food is available at specific times. Although less commonly adopted elsewhere for biodiversity conservation, this approach is not incompatible with certain categories of protected areas, and is a common fisheries management tool. Given the prevalence of periodic closures in the region and compatibility with traditional practices, closures may be some of the best suited fisheries management tools in the Pacific. Their role and optimization, in terms of biodiversity conservation, needs to be explored further.

Ultimately, under the prevailing LMMA approach, communities determine reserve sizes, configurations and closure regimes. This approach needs to be adopted in the context of national or

ecosystem-wide management. Management and enforcement are occurring at the local level, but temporal aspects may need new approaches for monitoring or planning.

3. *Achieving ecological networks or representative coverage*

Social and institutional strategies have been key factors in the rapid spread of LMMAs in some areas. Agencies have usually set logistical, social and other community criteria, rather than explicitly ecological factors, to guide site selection. Criteria such as community motivation and interest, absence of conflicts, and logistical support considerations, along with an adaptive learning approach, have ensured that a large body of "successful" or pilot experiences has accumulated, which then serve to inform approaches adopted elsewhere.

Initial technical input may often be reduced to simple rules of thumb, based either on experience elsewhere or on existing scientific information. Communities that adapt technical input based on traditional and local knowledge have a starting point for implementation that can be improved, based either on experience or on new information.

These "learning by doing" approaches are ill-fitted to Western and external conservation planning. Letting external priorities decide the choice of site for implementation of community conservation is an expensive approach, one that may lead to the management of smaller areas and the increased dependence on either incentives or investment of external resources. Such an approach is linked to the long lists of failed MPAs or "paper parks" (cf. Huber and McGregor 2002; cf. data on "active sites" in Govan 2009). National governments should ensure that prioritisation does not restrict the availability of more generalised (e.g. livelihood) benefits to a wider population.

The history of protected areas in the South Pacific suggests that failure to understand the inadequacies of top-down planning and the limitations of externally imposed models results in even more expensive failures when pilot projects are applied on a larger scale (e.g. the low survival rates of protected areas established under costly regional programmes such as the South Pacific Biodiversity and Conservation Programme and the International Waters Programme, as well as large national projects such as the Milne Bay project).⁷ This situation is exacerbated by the risk of undermining existing functioning or promising approaches reliant on local social capital.

7. Baines et al. 2002, 2006; Aitaro et al. 2007; Govan 2009.

Probably the most constructive and sustainable approaches observed in the study — in terms of cost-effectiveness and potential for institutionalisation under government systems — are those in Samoa and Fiji, and more recently in selected districts elsewhere. In these areas, national or sub-national approaches were used in the wide-scale establishment of LMMAs, guided by principles for successful and sustainable establishment derived from other locations. External inputs were employed to monitor biodiversity, with selective research done on key or emerging issues. In addition, field-level advice and procedures were chosen to maximise benefits.

4. *Planning processes and techniques*

It is often tempting to use unnecessarily sophisticated tools. However, when CBAM is promoted, the tools used should be as widely adaptable, inclusive, simple and intuitive as possible. This is essential for both communities and support agency staff.

Communities benefit from the simple tools that help rationalise planning, as well as from the support of neutral external facilitators. Processes and tools may have to be applicable to large groups and, in some cases, most of the community or stakeholders. The tools and processes employed by the community should also be directly related to agreements and implementation strategies, and be as transparent or accountable as possible. In addition, they should provide outputs that can be discussed with outsiders with little risk of misunderstanding, and facilitate internal and potentially external evaluation as part of adaptive management.

Staff from implementing organisations may come from a variety of educational and professional backgrounds, such as fisheries, conservation, university, and community development. Only rarely are there opportunities for formal training. Techniques and processes need to be easily understood, based on simple principles, and readily adaptable to local circumstances. They should also be easy to track and assess to facilitate quality control and detect systemic problems rapidly.

5. *Social networks*

Social networks or support “umbrellas” have been crucial in establishing and supporting communities and agency programmes. Operating at sub-national, national and international levels, these networks provide more flexible learning opportunities than

do formal methods. They also allow communities to establish linkages that may promote both ecological and cultural resilience (e.g. national and regional LMMA networks, as described in LMMA 2007, and Rowe 2007). Government agencies may sometimes provide most of these network services. However, they are particularly enriched when open to all sectors. In Melanesia, for example, they were originally driven by civil society before concerted attempts were made to encourage governments to take lead roles.

The linkages that networks facilitate should not be underestimated, as they may encourage the development of new and more appropriate institutional relationships and structures, the coordination of interventions and policy at a national level, conflict management, and information flow. Networks are likely to be stifled by prescriptive approaches, and it is difficult to identify key ingredients, other than building trust and ensuring the commitment of the individual or institutional members.

Most countries have either adopted or are moving toward a decentralised approach to LMMAs. This reduces logistical challenges and costs in supporting networks, and may improve responsiveness of institutional support to local issues.

6. *Information and research needs*

Much emphasis has been placed on “awareness raising,” and environmental education and information is of great interest to communities. However, considerable increases in effectiveness and savings can be made by improving information flow. There is much overlap in the information used by different programmes, and despite some sharing of information, donors still fund projects that “re-invent the wheel” (i.e. reproduce materials that are very similar to what already exists). A few judicious additions to existing sets of posters⁸ and audio-visual aids would most likely cover the initial needs of most communities. Participatory information and awareness raising tools have been regularly used as part of LMMA planning in Fiji, Solomon Islands and Vanuatu (Govan et al. 2008a).

Some aspects of “information materials” have not been addressed adequately. This reflects either the interpretation of priority information needs by outsiders, or a lack of research. Research should be more responsive to the needs of the managers (i.e. communities and their support agencies). At present, research and capacity priorities are often

8. For example, the initiative by the Foundation of the Peoples of the South Pacific International (FSPI) to make freely available the artwork for posters on coastal resource issues, which has resulted in their adoption and translation in over seven countries (<http://www.fspi.org.fj>).

derived from outside the region and based on inappropriate management models. There is now considerable technical support capacity in the region, but agencies face the challenge of delivering most targeted and appropriate support discerning priorities on the ground. New approaches to improve communication between communities and their support agencies on the one hand, and research institutions on the other, are needed.⁹

Some of the key research or information needs that have emerged from communities or their support agencies include: 1) provision of management information for individual species of interest to communities; 2) the organic spread of LMMAs in order to achieve national fisheries and biodiversity objectives; 3) optimising traditional closure systems (small sizes and periodic openings) as a management tool; 4) applying similar management approaches to watersheds; and 5) ensuring that research institutions address community information needs.

7. Integrated resource management as the basis for sustainable livelihoods and conservation?

The features of LMMAs, particularly in terms of size and permanence discussed above, imply that to fulfil their conservation and livelihood potential it is necessary to boost the expansion and growth of the LMMA approach, until adaptive management becomes the norm rather than the exception at the community level. The potential of the CBAM Pacific Island experience goes far beyond achieving international goals of “representative networks of MPAs”, and addresses the wider call for systems of integrated coastal (or island) management (ICM) or ecosystem-based management that address livelihoods, development, inshore fisheries and conservation as a whole (Whittingham et al. 2003; Bell et al. 2006; World Bank 2006; Jenkins et al. 2007; Rudle and Hickey 2008).

Current assessments suggest that MPAs alone will do little for biodiversity or livelihoods in the face of increasing upstream or watershed impacts, global impacts, generalised unsustainable marine resource use and increasing population and social pressures. These threats might be better mitigated through integrated and broadly based approaches that focus on community adaptive management, and extended through networks and linkages to other stakeholders in other locations and at other scales.

Integrated or ecosystem management may be best approached in a similar “learning by doing”

fashion, building on similar simple and intuitive participatory processes. Using CBAM institutions as the basic building blocks for representation at larger scales, these stakeholders can coordinate and interact with wider-scale institutional stakeholders. Many of the participatory planning tools and processes used at the community level are also suitable at this scale. The focus would be on achieving active and tangible management, rather than on comprehensive but ultimately inapplicable technical understanding. Experiences in Fiji and elsewhere suggest that this is not an unrealistic scenario, provided it builds on local culture (Tawake et al. 2007; Inglis et al. 1997; Thaman et al. 2005). International obligations are more likely to be met, in a more sustainable and locally relevant way as community-based approaches usually generate the most enforceable examples of closed areas and/or MPAs, and often serve as stepping stones to larger systems of protected areas or conservation initiatives (Whittingham et al. 2003; Bell et al. 2006; World Bank 2006; Jenkins et al. 2007). Achieving the potential of ICM based on CBAM will involve developing strategies that integrate previously separate conservation, fisheries and livelihoods sectors, and address some relatively neglected but vital areas.

8. Institutional and legal frameworks

In Polynesian countries, governments have often played a central role in implementing LMMAs within a relatively clear legal context. In contrast, in most Melanesian countries, civil society has assumed the main role in promoting and sustaining support for LMMAs.

Although it is widely recognised that it is neither appropriate nor sustainable for NGOs to play a long-term and central supporting role to LMMAs, there have been mixed results in attempts to build government capacity to support these networks. Where progress has been made, it is clear that long-term and patient investment in staff training and government institutional priorities are required, including cost sharing of staff and other support. Future initiatives should ensure appropriate government involvement, from the design stage to hand-over to communities.

In most countries, fisheries departments are perceived as the most appropriate lead agency. However, in other countries there is some confusion. Fisheries departments seem appropriate, because communities are interested primarily in livelihoods or fisheries benefits. In addition, fisheries departments typically have better resources and relatively

9. Wilson (2007) warns that self interest frequently clouds the priority setting capacity of researchers.

large numbers of decentralised field staff (provincial fisheries officers and so on), enabling them to provide the long-term support that communities will require.

Departments of the Environment could emphasise their crucial role outside of the routine extension-type work needed to support LMMAs. Well placed in terms of access to expertise and possibly external funding, they could ensure an overview of the more ecosystem-wide issues, including the fulfilment of national obligations within the context of the expanding network of LMMAs. In addition, selective monitoring of such key issues as vulnerable ecosystems and endangered species could inform and help coordinate the community based work to achieve the maximum environmental benefits. Specific gaps, such as breeding areas for endangered species, might be identified, and, if not addressed under the LMMA system, could need special protected area approaches. In relation to terrestrial protected areas, or other forms of management, it may still be beneficial for Department of Environment staff to engage with these issues through existing CBAM processes of coastal LMMAs, where these are relevant.

It will be important to strengthen and adapt national and sub-national policy and institutional frameworks in support of ICM/EBM (based on community-driven adaptive management) to ensure robustness to such external drivers as population increases, market pressure, climate change, and terrestrial impacts. The strengthening of institutional capacity will require innovative approaches from NGOs and donors, imaginative and tailored institutional structures that may adapt or hybridise traditional or national institutions. Bridges between these and other stakeholders can be built using networks and umbrellas, examples of which are now established in the region (Cinner et al. 2007; Cinner and Aswani 2007; Anderies et al 2004; Ostrom 1990; Berkes 2004; Tawake et al. 2001; Tawake 2007). These support networks or umbrellas have proven useful in the advancement of national community-based management in Fiji and also Solomon Islands and Micronesia (Fiji LMMA, Solomon Islands LMMA, Pacific Islands Marine Protected Areas Community – PIMPAC), and allow for effective partnerships between government and civil society.

A number of agencies have overlapping responsibilities (e.g. environment, fisheries and disaster preparedness/adaptation), which could interface with communities through an integrated community-based adaptive management approach, thereby cutting costs and ensuring uniformity in processes. It would be important to examine ways to encourage or at least support interdisciplinary and cross-sectoral approaches in appropriate and sufficiently flexible legal frameworks.

Melanesian countries are still working on the legal backing or support for LMMA approaches. This support is not yet essential, but will become more important as additional sites are included, and especially if government departments formally take over implementation.

It is essential that such legislation not hinder community implementation. This already occurs and is holding back community initiatives, forcing them to depend on external assistance to fulfil requirements. Requirements should be as simple as possible, hopefully in line with products and processes that communities are already preparing as part of planning exercises. In addition, these should not be subject to the production of additional regulations or legislation by central government, which again would represent a constraint beyond the control of communities. Some features of such legislation might include:

- A requirement for a simple management plan covering key agreed-upon points such as major resources, key problems and community-approved solutions. This should be “community appropriate” (e.g. flip chart, matrices, and just a few pages in length);
- Evidence of minimum criteria met by the plan regarding process (participation of appropriate stakeholders, wider community and time span), content (structure, objectives, simple to understand), context (existing legislation, ecological issues, wider coastal zone, national or ecosystem issues); and
- The continued acceptance of a community plan into registry or national database and its legal status is subject to demonstration of regular community review (e.g. every three years).

9. Meeting international obligations

Several problems emerge when attempting to assess the extent to which Pacific Island countries have met their obligations under the Convention on Biological Diversity (CBD) and the Durban Accord and Durban Action Plan to “effectively manage at least 10% of marine and coastal ecological regions”, or to cover at least 20–30% of each marine habitat with strictly protected areas (*cf.* Benzaken et al. 2007; Spalding et al. 2008; Wood et al. 2008). There is little agreement regarding the extent of marine or coastal areas to which the commitments refer, possibly because of the lack of complete basic datasets on national marine areas (except in the cases of exclusive economic zones and coral reef area).

Although dependent territories and associated states maintain a relatively reliable record of MPAs, independent states do not. Most countries do not maintain an up-to-date national list, and

have relied on data submitted to the World Database of Protected Areas. Data submitted appears to be extremely variable, generally under-reporting active community conserved areas (CCAs) but, of far greater concern, vastly inflating marine management area coverage with inactive or inappropriate sites, particularly in Tonga, Papua New Guinea and Solomon Islands.

Another issue is the extent to which wider managed areas and no-take zones or taboos equate with “effective management” and “strict protection” in the conventions. This, and also the mechanisms and criteria by which extended tracts of land and sea under customary tenure could be considered as CCAs, should probably be debated at a high political level, in the context of wider national development agendas.

Fiji may be the only independent country that is well-advanced in extending some sort of management to its inshore areas or reef habitat. Targets for the remaining independent countries appear extremely distant.

Given these countries’ other national and international commitments to poverty alleviation and sustainable development, it may be appropriate to examine how wide-scale coverage of marine resource management can be achieved, as in Fiji (and to a lesser extent Samoa). Approaching this piecemeal, based on individual MPAs, would likely be both impossible and produce comparatively little national benefit.

10. Financial costs of expanding LMMA networks

The most cost-effective approaches to achieving objectives and targets of food security, poverty alleviation and conservation in South Pacific countries would be integrating LMMAs into national resource management strategies. This includes inshore fisheries management, integrated coastal management strategy, disaster preparedness, biodiversity and endangered species, and climate change adaptation. Key criteria for such a resource management scenario integrating LMMAs in Melanesia would include: 1) their design to fully integrate into government functions over the medium term; 2) being decentralised into logistically functional management areas (provinces or similar); 3) being highly cost-effective and with a likelihood of sustainable financing; and 4) being based on a staggered or cumulative approach optimising trickle down or snowballing effects.

11. Integrating government support for national LMMA networks

Various levels of government are the appropriate providers of long-term core services required to establish and service managed marine areas. It makes sense for the fisheries authority to be a lead organisation because they have both the largest presence (national and provincial levels) and the greatest capacity to address the principal motivations of most marine managed areas, whose communities identify fisheries management as their major priority. Associating biodiversity conservation with more economically driven marine resource management is a sensible approach, and departments of the environment are well placed to ensure consideration of ecosystem-wide issues, vulnerable ecosystems and endangered species, as well as to conduct essential monitoring. They can also address issues concerning adaptation to climate change.

The most practical investments with potential for long-term impact are those for enhancing the capacity of government agencies to provide the long-term support mentioned above and, equally important, to secure recurrent budgets for this purpose. Whereas an ultimate goal might be to ensure governments prioritise marine resource management budgets, some sort of conditional trust fund arrangement may be vital to guard against reallocation of essential operating budgets.

Most governments have either established or are actively considering units appropriate to supporting community-based inshore management. Political will and capacity are the two major challenges. However, the incentive provided by international commitments and major funding initiatives may make progress on the former, while experiences in Fiji and elsewhere suggest that with time and NGO commitment, capacity can be transferred to counterpart government institutions. Fiji and recent Solomon Islands experiences suggest that with high-level institutional commitment, functional partnerships between government and NGOs can be achieved, and indeed will be vital.¹⁰

12. Decentralising support for local management

All countries have shown clustered and decentralised approaches to establishing and supporting LMMAs. Aside from the ecological functions of such networks, there are significant logistical and cost benefits to the approach. Staff time and transport account for most of the costs, because supporting community sites from national and sometimes

10. National LMMA networks, while initially NGO-led, are now coordinated from fisheries departments in both countries, and national policies are being adapted to reflect this partnership.

even provincial capitals is both expensive and time consuming. The definition of optimum management units will be important, and criteria for them should weigh logistical, administrative, social and cultural factors, as these will facilitate implementation if carefully chosen. These units may correspond to provincial jurisdictions or islands in Vanuatu and Solomon Islands, and districts or some provinces in Papua New Guinea. Such practical considerations as the existence of a functioning provincial fisheries office may be a determining factor. Decentralisation presents challenges for coordination and capacity building, so the role of social networks may be crucial. NGOs might need to consider seconding staff to government field offices.

13. Improving cost effectiveness and sustainable financing

As noted above, Melanesian countries face serious development issues, and their financial resources are stretched thin. The national environment and fisheries departments have extremely low budgets relative to the large areas and challenges they face. If LMMAs are to secure long-term recurrent support within national budgets, they must be demonstrably cost-effective. Arguably, the fundamental tenet of “sustainable financing” is to ensure that their financial requests are as cost-effective as possible. Few, if any, pilot projects have referred explicitly to seeking cost-effective approaches, and many have been unjustifiably over-financed.

14. Implement gradually

Major national and regional projects are both notoriously ambitious and infamously wasteful of resources. Further, direct engagement with every coastal community in Melanesia would be astronomically expensive. Therefore, a gradual approach aiming both to increase the enabling environment for community management, and focus on establishing a decentralised capacity government through successful large-scale examples of LMMAs networks, would likely be both affordable and achievable.

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