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Policy-relevant assessment of community-level coastal management projects in Sri Lanka

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Abstract

Community-level coastal management programs are being introduced in some countries as a practical strategy to respond to conditions of poverty and unsustainable resource use practices. Two recently developed Special Area Management (SAM) programs developed in Sri Lanka are part of this international trend. These two SAM programs were assessed to identify planning and early management issues that may be relevant to future projects. This paper examines general issues in assessing community-level projects. The particular focus is on a few issues of general relevance: community participation in the planning process; the adequacy of the boundary; quality of the technical analysis; adequacy of resource management activities; transparency of management decisions; community acceptance of the program; and sustainability of resource management activities.

1. Introduction

First-generation coastal management programs are most often characterized by 'top-down' approaches to management. That is to say, coastal management programs are frequently organized and implemented by national and provincial levels of government, focused on large geographic areas and replete with mandates to subordinate levels of government and coastal resource users about how resources are to be used and hazards prevented. This 'top-down' approach has been most successful

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where there is broad agreement about the aims of management, clarity about who the coastal users are whose behavior is to be managed and well-designed administrative procedures for insuring compliance. The 'top-down' approach also works best in jurisdictions with well-recognized property regimes, ample management resources and political commitment to the program [1–3].

Some of these conditions do not exist in many parts of the world. Lack of agreement about resource use priorities, lack of management resources, inadequate enforcement procedures and political will are common problems in many jurisdictions. Moreover, in many tropical areas, "poverty forces people to opportunistically search for employment, employ unsustainable methods of farming and fishing, and resist management from fear of income loss" [4]. Increased competition for coastal resources, environmental degradation and resource depletion, the weaknesses of centralized management and the recognition that the problems of poverty and unsustainable resource use practices have to be addressed more directly have led to explorations of new initiatives in coastal management.

The major new coastal management initiatives focus on communities and defined resource user groups [4–8]. Some focus on developing programs for self-management by communities or user groups or co-management with government. Others seek to re-establish traditional forms of user-group management. All represent deliberate efforts to encourage more community direction and participation in coastal resource management, to incorporate livelihood improvement efforts and to reduce activities that degrade or deplete coastal resources.

In this paper we examine efforts to establish and maintain two community-level coastal management pilot projects in Sri Lanka. We seek both to assess the initial progress of these two pilot projects and to identify potential general lessons about community-level coastal management.

In 1994, Sri Lanka's Coast Conservation Department initiated two pilot Special Area Management (SAM) projects at two coastal sites. These two SAM projects are part of a more comprehensive approach to coastal management that has been evolving since the early 1980s. The Coast Conservation Act, enacted in 1981, was both a response to severe problems of coastal erosion and recognition that a broader approach to coastal management was needed that included habitat degradation and depletion, reduction of conflicts among uses and users and other problems. The Act established a 300-m coastal zone within which development was to be regulated by permit, required a variety of coastal planning studies and the preparation of a coastal plan [9].

Since 1983, more than 2900 permit applications have been reviewed. A coastal management plan that focused on the management of coastal habitats, and scenic, historic and archeological sites in the coastal zone as well as erosion was prepared and adopted by the Cabinet in 1990. Because the Coast Conservation Act requires the plan to be revised every five years, in 1996, a new plan was developed which addresses the same coastal problems that were the focus of the original plan, but also includes a new chapter on coastal pollution [10]. In addition to the planning and permitting activities, the Coast Conservation Department has supervised the construction of more than 3000 m of coast protection structures, developed an effective strategy

for reducing coral mining, engaged other agencies in collaborative efforts to improve coastal habitat management, engaged in numerous public education activities and begun the devolution of some regulatory authority to local units of government.

In the early 1990s, the Coast Conservation Department and the University of Rhode Island/US Agency for International Development Coastal Resources Management Program in Sri Lanka conducted a review of Sri Lanka's coastal management implementation activities. The review was published in a report: *Coastal 2000*: *A Resource Management for Sri Lanka's Coastal Region*. While identifying some of the strengths of the program, Coastal 2000 identified several problems in the initial implementation activities:

- Single agency and sectoral approaches to solving coastal resources management problems must be replaced by a more comprehensive perspective and approach.
- The implementation of the Coast Conservation Act (CCA) by the Coast Conservation Department (CCD) has demonstrated that the emphasis on regulation needs to be revised.
- Important resource management concerns such as water quality, habitat degradation, natural resource use by people and institutional weaknesses are interrelated and require strategies involving more than one agency and a variety of management techniques.
- The narrow geographic definition of 'the coastal zone' does not adequately recognize the interconnections within coastal ecosystems and resources.
- Participation by local and provincial officials and coastal communities in the formulation of plans and strategies must be strengthened [11].

Coastal 2000 recommended a second-generation coastal resources management strategy be implemented at the provincial, district and local as well as national level, more monitoring and research and an enlarged public awareness and education program. It also recommended the design and implementation of Special Area Management Plans "to be implemented at specific geographic sites of ecological and economic significance."

Special Area Management Plans (SAMPs) are conceived as a 'bottom-up' strategy for managing coastal resources that complements the existing 'top-down' regulatory approach in Sri Lanka. They allow for intensive, comprehensive management of coastal resources in a well-defined geographic setting. Participation by community residents or stakeholders in planning and management is central to the SAM concept: "A basic premise of the SAM process is that it is possible to organize local communities to manage their natural resources and that they will continue to do so if they perceive that they derive tangible benefits from better management" [12]. Most advocates of SAM planning see government agencies playing a variety of roles in SAM planning and management. Government agencies serve as 'catalysts' or 'facilitators' which help organize communities to engage in resource management and provide technical support, as 'mediators' to help balance competing demands in

resource management or as 'partners' of communities engaging in 'co-management' with community groups.

In 1991, the Coast Conservation Department (CCD) designated two SAM sites to begin planning: Hikkaduwa and Rekawa. Hikkaduwa is a tourist destination settlement about 100 km south of Colombo. Small- and medium-sized hotels, restaurants, bars, and shops line both sides of the 4 km coastal highway bordering the Hikkaduwa Marine Sanctuary. Urban run-off, untreated sewage discharge, sedimentation of the reef, wastes from boats and near-shore conflicts among boats, swimmers and other activities threaten the popularity of the town as a tourist destination site. Rekawa, on the other hand, is a lagoon environment in which coral mining, competition among fisherfolk, interference with natural flushing of the lagoon and other uses have degraded the reefs and lagoon and threatened the livelihood of the fisherfolk living around the lagoon.

Beginning in 1992, CCD staff and representatives from the Coastal Resources Management Program began the process of SAM planning at both sites. Government officials in selected agencies at the national level were contacted and their interest and support was solicited. At the same time, CCD and CRMP staff began to liase with community groups to identify groups with whom it might be possible to work in identifying community perceptions of resource management problems and priorities. Over the next three years, government officials, community groups and interest group representatives identified priority resource management issues and technical questions. Special Area Coordinating Committees, composed of both community representatives and government officials, were established at both sites. Technical studies were commissioned and 'environmental profiles' were developed for each site. Resource management issues and strategies were identified for both sites and compiled into special area management plans. These plans were both adopted by their respective Coordinating Committees in 1996.

In late 1996, the Coast Conservation Department, the AID-funded Coastal Resources Management Project and the Sri Lanka USAID office commissioned an evaluation of the SAM planning and management processes at the two SAM sites, particularly concerning:

- The processes leading to the development of SAM plans at the two sites.
- The coastal management strategies identified for each site.
- The implementation activities undertaken at each site.
- Implementation 'problems' or concerns at each site.
- Potential 'lessons' for SAM planning and management at other coastal sites.

These objectives reflect several assumptions about evaluation research generally and this evaluation, in particular. The first assumption is that this was to be a 'formative' evaluation. The SAM plans had been in effect less than a year. Each has a five-year implementation schedule. Hence, it is too early to make judgments about the 'impacts' or 'outcomes' of the plans. Rather the emphasis is on the perceived adequacy of the planning processes and the initial implementation processes. Second,

the emphasis in this evaluation is on both assessing specific 'progress' (or lack thereof) at the two sites and identifying general 'lessons' that may be applicable if, as is currently planned, additional SAM planning and management activities are to be undertaken.

Individual and group interviews were conducted with local government officials, resource user groups, commercial interest groups, representatives of non-government organizations and residents at both sites. The observations in this paper are based on these interviews and the review of the SAM Plans, Environmental Profiles, technical studies and memoranda prepared as part of the SAM process and published and unpublished articles on the SAM process.

2. The premises and practice of Special Area Management in Sri Lanka

Special Area Management (SAM) is described in CCD and CRMP plans, publications and technical reports as both a practical strategy for increasing community participation in resource management within a relatively small geographic area and as a set of activities to be employed in establishing SAM plan. Implicit in this literature are assumptions about who has 'rights' to use coastal resources, what constitutes a 'community', and how homogeneous communities are. Much of this literature is also silent about how power is distributed among individuals, families and groups in communities, how management responsibility is most effectively organized, and the incentives needed to engage community stakeholders in collective efforts to manage resources. Also missing are discussions about community 'capacity' to share in the management of resources, the willingness of government agencies to share resource management responsibilities, the conditions that foster 'sustainable' co-management and a host of other considerations.

The SAM concept is based on a set of premises about the role of local communities in coastal resource management. Some of those premises are identified in White and Samarakoon's update of a concept paper on special area management by Wickremeratne and White. In assessing local-level coastal resource management, they cite several weaknesses of 'top-down' coastal management from the perspective of local communities:

- Community residents don't perceive opportunities for participation in the planning decisions and implementation processes ....
- The means to cushion economic dislocations caused by implementation of improved resource management have not been specified and implemented as a prelude to such implementation (e.g. alternative livelihoods, relocation and participation in program planning) ....
- The financial and social benefits of sustainable resource use practices have not been adequately demonstrated. Hence, local communities do not perceive themselves as beneficiaries.
- Implementation is by state officials who do not communicate well with local leaders; hence the program is viewed as interference by outsiders [11].

The SAM management strategy is seen as addressing these conditions. As White and Samarakoon put it:

> The basic premise of the SAM process is that it is possible to organize local communities to manage their natural resources and that they will continue to do so if they perceive that they derive tangible benefits from better management. The planner, the planning agency or the organizational group play only a catalytic role in organizing the local community. They can provide technical and financial support for the management effort which is formulated and implemented as a local community and/or local government effort. Hence, the planning agency takes on the role of facilitator rather than that of superior authority that imposes its will on the local community. Important aspects of such facilitation are technical inputs which provide a sound scientific understanding of the nature, scope and potential of the resources when managed sustainably and financial support for project activities. Also the mediator role is important where competing demands are balanced in a manner that ensures the sustainability of resource use.
>
> Community participation is possible in SAM planning and implementation to a degree not possible in broader area planning. Whether SAM planning is initiated by an outside national or local government or private organization it must inherently involve people living within the SAM site. It looks at and considers the total ecosystem including the human elements and communities and their potential role in the process of planning and implementation. For successful management of natural resources within the context of a SAM site, implementation and monitoring becomes a local responsibility and reduces the need for outside support in the long run [12].

According to White and Samarakoon, establishing a SAM Plan requires a number of steps:

(a) *Get agreement on the need for a SAM process at the national level*. The agreement on the two SAM sites in Sri Lanka occurred at a workshop after discussions among key national agencies lasting more than two years.

(b) *Compile an Environmental Profile of the area*. Profiles consisting of environmental, social, political and institutional information was compiled with the assistance of community groups over a fifteen month period.

(c) *Enter the community with full-time professional facilitators and community organizers*. In March, 1993, project field officers were hired for both Hikkaduwa and Rekawa. In Hikkaduwa, the field officers were expected to contact representatives of hotels, restaurants and other tourist facilities, coral miners, fishing groups, owners of glass bottom boats. In Rekawa, the fisherfolk, coral miners, farmers and laborers were contacted.

(d) *Conduct planning-cum-training workshops at the SAM sites*. The project field officers were expected to organize workshops at the SAM sites. "The main thrust of the meetings is for the education of local people about their environment and how coastal ecosystems function in relation to the resources people are dependent on, and for involving people in the SAM planning process."

(e) *Organize resource management core groups*. Project field officers were expected to organize those who are most dependent on coastal resources: fisherfolk, recreation users, et al. "The core groups are the potential stabilizing and institutional forces which can make the SAM plan implementation process sustainable."

(f) *Draft management plan through community involvement and determination of indicators for monitoring*. The plan is to be based on inputs from community groups, government agencies and project consultants. "The process of generating the plans is open and flexible so that all interested parties can have a role and express their views which would be reflected in a plan."

(g) *Implement pilot projects while planning continues*. "Although planning is an on-going process which requires continual refinement, it is important that small pilot implementation projects be started early which provide and show real results to the participants."

(h) *Refine management plan from experience and broaden implementation*. "The process of plan refinement from actual implementation experience is crucial to the long-term acceptance of the plan."

(i) *Review and refine institutional arrangements for implementation*. "Although part of the plan refinement, the institutional arrangement for management must be completely appropriate and sensitive to local political realities or the plan will not be implemented and government will not provide support" [12].

3. The two special area management sites

This section describes Hikkaduwa and Rekawa, identifies the primary resource management issues, and outlines the management strategy for the two sites. The information in this section is drawn almost exclusively from *Special Area Management Plan for Hikkaduwa Marine Sanctuary and Environs* and Special Area Management Plan for Rekawa Lagoon.

3.1. Hikkaduwa

Hikkaduwa is a small-scale beach resort town located about 100 km south of Colombo in Galle District. Sandy beaches, coral reefs, inexpensive hotels and restaurants and Sri Lanka's first marine sanctuary are among Hikkaduwa's attractions. Tourists spent more than 300,000 guest nights in Hikkaduwa in 1992 and contributed more than Rs 109 million in direct benefits and approximately Rs 900 million in indirect benefits to the economy [13].

The rapid growth of tourism has contributed to a number of problems in Hikkaduwa, including degradation of the coral reef ecosystem, deteriorating coastal water quality, increasing traffic congestion and noise, and conflicts between tourist and fishing interests [13].

The Hikkaduwa Special Area Management and Marine Sanctuary Coordination Committee was initiated in 1992 under the chairmanship of the Minister of Tourism an Rural Industrial Development. The Director of the Department of Wildlife

Conservation served as co-chair. Since 1992 the chairmanship of the committee has changed several times. It is now chaired by the Divisional Secretary. Membership of the committee includes representatives of the National Aquatic Agency (NARA), the Ceylon Tourist Board (CTB), the Urban Development Authority (UDA), the Divisional Secretariat and the Pradeshiya Sabha (PS) Hikkaduwa, the Association of Tourist Board Approved Hoteliers of Hikkaduwa, the Hikkaduwa Glass Bottom Boat Owners Association, the Hikkaduwa Fisheries Cooperative Society (FCS), an the Hikkaduwa Small Hoteliers and Restaurateurs Association (*SAM Plan for Hikkaduwa Marine Sanctuary and Environs*, 3). Staff from the Coast Conservation Department and the Coastal Resources Management Project helped mobilize the planning effort and have helped facilitate implementation activities.

The project site is shown in Fig. 1. The SAM project area includes the marine sanctuary (45 ha) on the ocean side and 13 Grama Niladhari (GN) Divisions (1020 ha) extending from Totagamuwa in the north to Patuwatha in the south. The 1990 population was approximately 13,815 or about 3424 people per sq. km. Urban uses consume about 40% of the total SAM area and coconut plantation accounts for another 35% of the land area [13].

Discussions among members of the coordinating committee led to the identification of a number of key issues in the Hikkaduwa area are given in Table 1.

To address these issues the coordinating committee adopted four objectives for the overall SAM Plan:

1. Improve the health of the ecosystem within and near the sanctuary by: reducing physical damage to the coral reef; improving coastal water quality; and, enhancing the populations of marine organisms.
2. Improve the capability of the local community to protect and manage the coastal resources in an integrated and sustainable manner by increasing public awareness; ensuring community participation in planning; and by developing institutional and legal support for SAM planning actions.
3. Increase the benefits at the local and national level by encouraging a viable local economy based on sustainable levels of tourism and fishing [13].

An Environmental Profile was developed and, based in part on the Profile, a SAM plan was developed. The plan was developed primarily by CRMP staff and consultants based on recommendations by the steering committee and others. The *SAM Plan for Hikkaduwa Marine Sanctuary and Environs* outlines 15 objectives, 16 strategies and 116 specific actions intended to designed the objectives.

3.2. Rekawa

Rekawa, a rural coastal community, is located about 200 km south of Colombo in the Tangalle District. The settlement is dominated by Rekawa Lagoon. The lagoon, which covers about 250 ha, is surrounded by mangrove and scrub forest (about 200 ha). The lagoon is bounded on the ocean side by a broad, sandy beach about

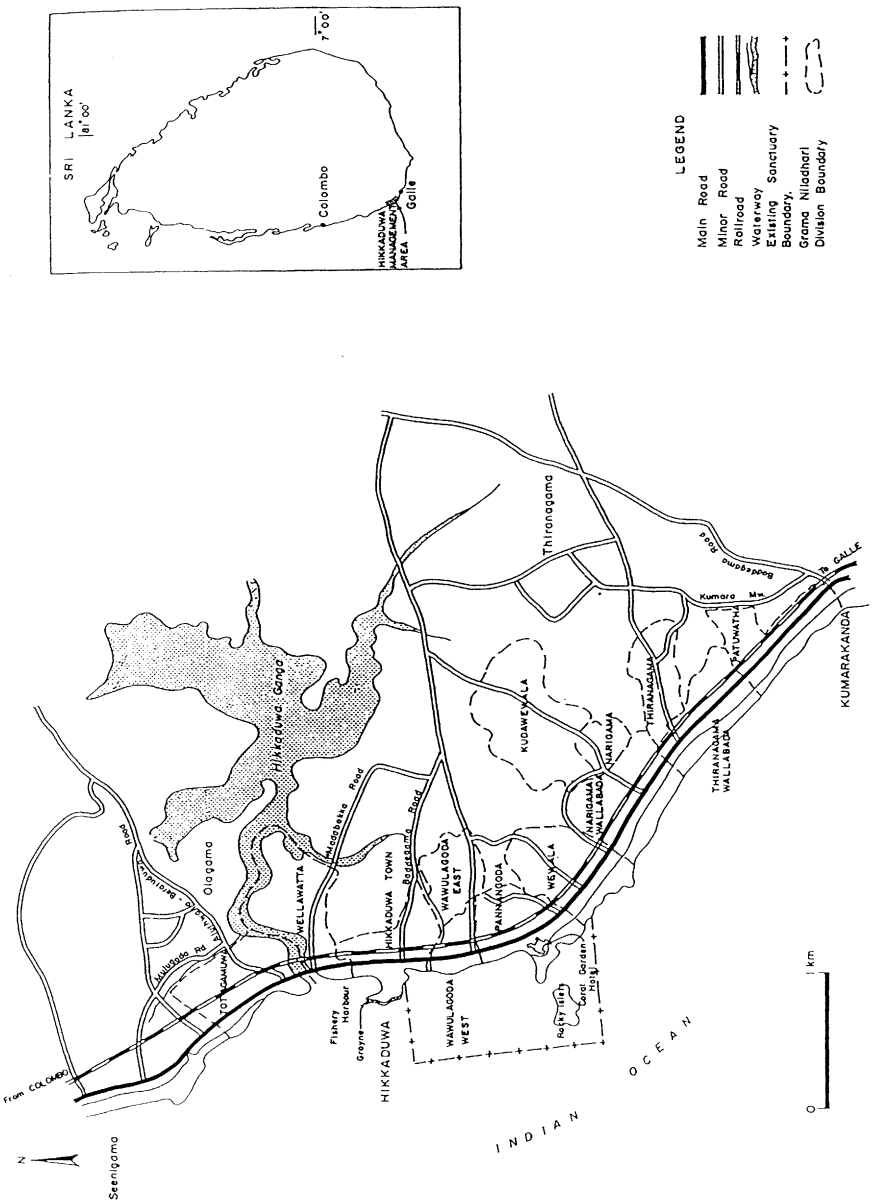

Fig. 1. Boundaries of the Hikkaduwa Special Management Area (Source: Special Management Plan for Hikkaduwa Marine Sanctuary and Environs, Sri Lanka).

Table 1
Management issues in the Hikkaduwa SAM site (Source: SAM Plan for Hikkaduwa Marine Sanctuary and Environs, 12)

Hikkaduwa marine sanctuary resources
Degradation of coral reefs and marine life
Inadequate anchorage and landing for fishing boats and poor access route into the harbor
Poorly controlled and conflicting uses of the marine sanctuary
Water quality and waste disposal
Deteriorating coastal water quality
Improper disposal of sewage and gray water into ground water and coastal waters
Inadequate solid waste disposal
Insufficient fresh water supply
Shoreline and community character
Excessive traffic speed, noise and congestion
Increasing intensity of beach and sanctuary use
Illegal construction on beaches and loss of public access
Impacts of tourism and need for livelihood opportunities
Lack of alternative forms of income generation
Local informal tourism facilities do not work together
Aggressive touts intimidate visitors
A reputation for prostitution

10 km. long. Landward of the lagoon is a large tract (about 500 ha) of abandoned paddy fields [14].

The SAM planning area encompasses 20 villages in seven Grama Niladhari Divisions. About 5400 people (1200 families) live around the lagoon. The project area is shown in Fig. 2. Most of the population (45%) is less than 20 years old. About half the population lives off lagoon or sea fishing and the other half is engaged in some type of agricultural activity. Their incomes are low even relative to Sri Lankan standards [14].

Because the population relies on the coastal resource base for their livelihood, degradation and depletion of coastal resources threatens to drive incomes even lower. Agriculture has declined because of poorly planned irrigation. Some families relied on coral mining even though coral mining and processing is illegal. Productivity of the lagoon has decreased although the potential for increased yield is well [14].

The SAM planning process in Rekawa is coordinated by the Rekawa Special Area Management Coordinating Committee. The committee includes representatives from the National Aquatic Resources Agency (NARA), the Irrigation Department, the Divisional Secretary (DS), the Tangalle Pradeshiya Sabha (PS), the Hambantota Integrated Rural Development Program, the Department of Fisheries and Aquatic Resources Development and the Rekawa Lagoon and Sea Fishery Cooperative Societies [14]. Staff of the Coast Conservation Department and the Coastal Resources Management Project served as catalysts to the planning process and continue

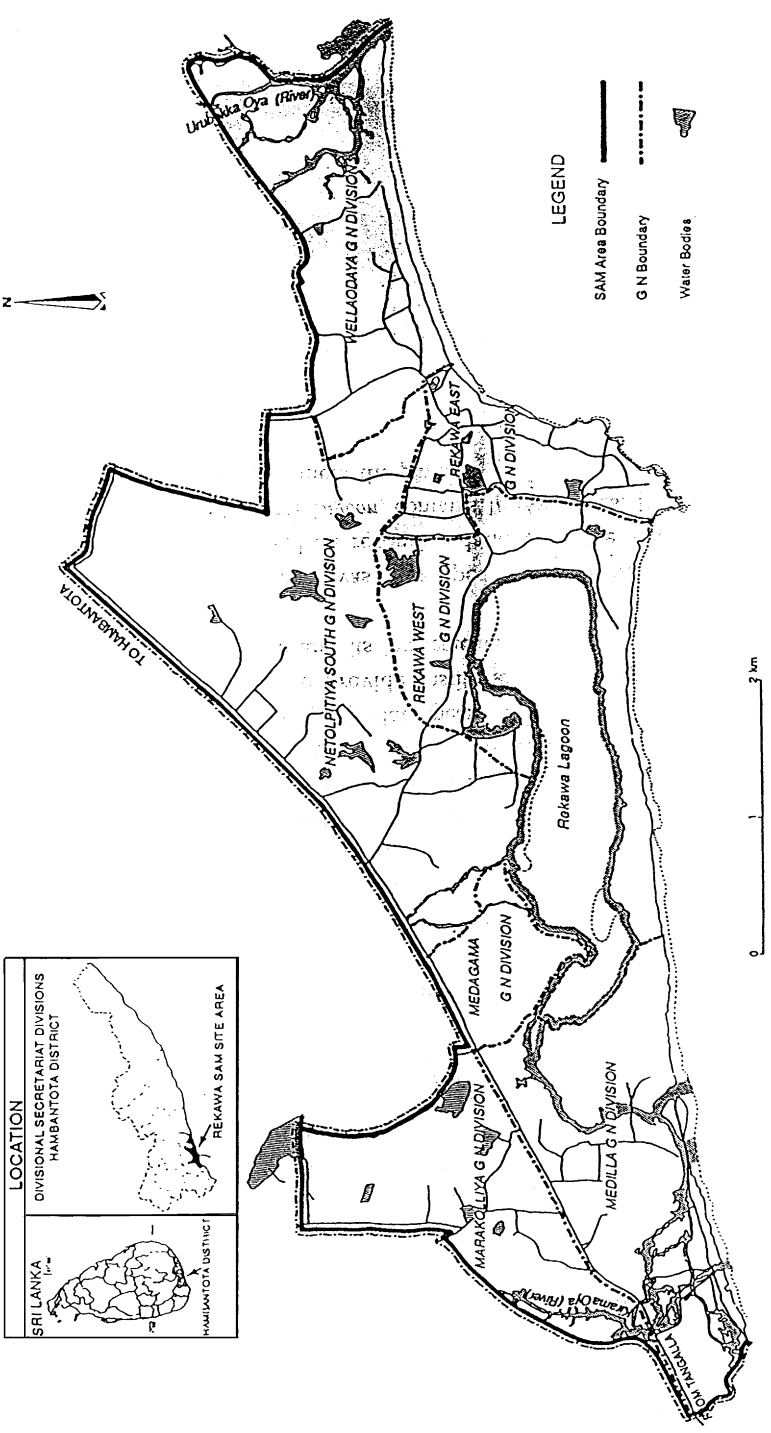

Fig. 2. Boundaries of the Rekawa Special Management Area (Source: Special Area Management Plan for Rekewa Lagoon, Sri Lanka).

Table 2
Management issues of the Rekawa Special Area Management Plan (Source: *SAM Plan for Rekawa Lagoon*)

Lagoon water system degradation
Reduced fresh water flow due to irrigation uses
Reduced sea water exchange in the lagoon
Sedimentation and pollution of lagoon
Lagoon and marine resource depletion
Over fishing of shrimp and fish in lagoon
Degradation of coral reef from coral mining
Poaching of turtle eggs and slaughter of animals
Erosion of sea beach related to coral mining
Cutting of mangroves and scrub forest
Shoreline and land use problems
Abandoned land in Yarawela Yaya and Patha Palama Welyaya due to high salinity
Low production and diversity in agriculture
Lack of guidelines and zoning for aquaculture
Lack of guidelines and zoning for tourism development
Incidence of poverty and lack of livelihoods
Over dependence on social welfare programs
Weak community organizations with poor leadership
Lack of training and education for alternative jobs
No development of sustainable aquaculture and tourism

to assist in implementation. The committee began meeting in mid-1994 and continues to meet monthly.

The committee identified a number of issues to be addressed by the SAM plan, and are given in Table 2.

To address these issues, the coordinating committee adopted several project objectives:

1. Strengthen community organizations and build new ones to enable them to participate actively in the management of their natural resources and livelihoods.
2. Improve the productivity and diversity of the ecosystems by reducing the degradation of the beach, the lagoon, the mangroves and the fisheries.
3. Increase community awareness of natural resource values and understanding of resource ownership for management to sustain environmental and economic well-being.
4. Reduce conflicts among users of natural resources.
5. Conduct research and periodic monitoring activities to provide information and feedback to the Management Plan.
6. Develop alternative employment for those engaged in degrading the natural resources through development of agriculture, aquaculture, tourism and other appropriate means; and,

7. Promote policies to provide institutional and legal support for the Management Plan and its implementation.

A SAM plan for Rekawa was developed by CCD and CRMP staff and consultants in 1996 based on recommendations by the steering committee. The *SAM Plan for Rekawa Lagoon*, contains 16 objectives, 16 strategies and 71 actions designed to implement the plan.

4. Interim assessment of the development and implementation of the two Sri Lanka SAM projects

Evaluations generally serve three broad purposes: rendering judgments about program successes or failures; diagnosing problems and facilitating improvements; and/or generating knowledge [15]. These purposes suggest different orientations toward the organization and conduct of evaluation. A judgmental focus emphasizes accountability. A diagnostic focus provides a basis for program adjustments and re-design. Focusing on knowledge generation suggests theory-testing or lesson-drawing [16]. These purposes are not necessarily mutually exclusive, but in most evaluations one evaluative purpose tends to dominate.

An accountability focus requires the specification of criteria for making judgments. For funders, program or project goal achievement is a typical basis for making judgments about project success. More sophisticated judgmental evaluations focus on questions about program outcomes, including unintended or 'unofficial' outcomes. In the case of community coastal management, such outcomes might include changes in biological productivity, changes in rates of resource degradation or depletion, changes in the livelihood conditions, nutrition or health status of coastal residents or other indicators of coastal resource conditions and human health and welfare. Assessing the degree to which such outcomes have been achieved can be important in making decisions about whether to continue, expand or terminate programs and projects.

A diagnostic focus emphasizes program improvement through the identification and correction of management or implementation problems [17,18]. Project personnel, local government officials, community residents, sometimes even local donor representatives frequently think they have a good sense of project progress toward achieving outcomes. They may perceive changes in resource conditions such as biological productivity and the material welfare of community residents. They acknowledge that some coastal conditions show improvement, while others show no improvement–or decline. While there may be a shared sense of relative certainty about the status of resource conditions and material welfare, there is often much less agreement about why the project is going well (or badly). Hence, project personnel, government officials and community stakeholders are less likely to see a compelling need for studies of coastal resource conditions. They are more likely to be interested in validating their perceptions of *why* the project is not doing as well as expected. In their terms, useful evaluations are those that help them to identify the project activities,

legal, administrative or political factors, institutional issues or socio-economic conditions that alone or together contribute to successful project implementation.

A diagnostic evaluative focus emphasizes identification of strengths and weaknesses in project design, implementation activities or other project features that can be modified. Such a focus might focus on the clarity of project goals, the strategies for achieving project goals (and the assumptions on which they are based), the degree to which implementation activities (funding decisions, regulatory activities, etc.) are consistent with project design, and related issues. The underlying assumption of such assessments is that 'good' implementation is a necessary, although not a sufficient condition for project success. This emphasis allows project managers to identify and correct 'problems' in the project that may improve project performance and directly or indirectly increase the probability of improved resource conditions at a specific site. For example:

1. Is a ban on coral mining at the project being enforced? If not, why not?
2. Have funds been allocated for a training program called for in the project design?
3. Have resource users' groups been formed? How well are they functioning?

Judgmental and diagnostic-oriented evaluations involve the instrumental use of evaluative findings to make program decisions. Evaluations focusing on knowledge generation, by contrast, are undertaken to test ideas and management concepts or, more broadly, to influence the policy community "where they have a chance to affect the terms of debate, the language in which it is conducted and the ideas that are considered relevant in its resolution" [16]. In the context of community level coastal management, many of the key concepts are drawn from the literature of institutional design and common property resource management. This focus assumes that community projects are sustainable only if there are institutional mechanisms to promote resource conservation, limit 'free-riding', and resolve conflicts among users [19–21].

Knowledge-oriented evaluations seek to identify issues of importance across projects. For example, in coastal projects which rely on the formation of user groups and the adoption and enforcement of resource use 'rules', what is the role of government in supporting and enforcing such rules? How and under what circumstances should public agencies help monitor and control access of resource users, such as fishers, who are 'outside' the project boundaries? Or consider the government-community co-management of coastal resources. To the extent that such co-management involves new roles for government officials, some of which are both unfamiliar and involve perceived burdens in terms of additional workload and shared authority, what combination of incentives and mandates is likely to encourage co-management and help to insure the sustainability of collaborative management? The answer to these questions at specific sites can promote 'learning' that may be relevant to other projects in other places.

Because the two projects at Hikkawduwa and Rekawa are in the first year of a projected five implementation process, it is premature to focus on impacts or outcomes of the two SAM projects. Hence, this assessment focuses both on the quality of planning, design and implementation of the two projects (*diagnostic*) as well as key

issues of institutional design. More specifically, this assessment addresses the following issues:

- Participation in tje planning process.
- Designation of boundaries.
- Quality of the technical basis for management.
- Status of implementation activities.
- Quality of resource management activities.
- Transparency of management decisions.
- Governmental and community acceptance of process.
- Sustainability of resource management activities.

These issues were chosen for several reasons. First, several of the issues, such as the boundary question and participation are identified in the literature of institutional design and community planning as central to effective planning for areas involving common property or open access property regimes [5,19–21]. Second, some issues were chosen because they bear on the quality and effectiveness of implementation processes and may be useful in improving project effectiveness. Finally, a few issues were chosen because they are identified as highly relevant to on-going discussions about integrated coastal management [22].

4.1. Participation in the planning process

Participation is a key element in the special area management process design. Answers to several questions are of interest: How open and participatory was the SAM process? What was sought of participants? To what extent were all stakeholders represented? What steps were taken to build 'civic infrastructure' or participatory capacity?

One major purpose of a participation program is information-gathering. Designing a SAM project requires both technical information as well as 'time and place' information. Technical information is needed to assess resource conditions, identify causes for resource conditions and to design some types of environmental and economic interventions. 'Time and place' information, on the other hand, is acquired by individuals who know the nature of a specific physical and social setting [21]. This 'time and place information' — what Geertz call local knowledge — refers to local environmental conditions, human or physical capital currently underutilized in the area and existing institutional relationships that could be used to construct [23].

One purpose of participation is to insure that important 'time and place' information has been identified. In the case of Hikkaduwa, that 'time and place' information included how glass bottom boat owners were organized and their willingness to collaborate with each other, information on the causes of degradation of the Marine Sanctuary, waste disposal practices at beachfront hotels and restaurants. At Rekawa, 'time and place' information included determining which families were engaged in coral mining, how willing lagoon fishermen were to re-develop fishing rules and where the primary sources of lagoon degradation were. At both Hikkaduwa and Rekawa,

the long-planning phase and the presence of CCD and CRMP staff serving as facilitators at the site helped insure that a great deal of technical and 'time and place' information was gathered. In general, the information gathered emphasized resource conditions over political and institutional relationships, but a great deal of useful 'time and place' information was gathered and used in the SAM design process.

A second major purpose of participation is to organize agreement regarding the nature, extent and causes of community resource problems and to help create consent regarding proposed interventions. Designing a SAM project is both a technical process and a deliberative process. As a technical process in which, for example, alternatives for managing wastes, reducing impacts on the reef at Hikkaduwa or controlling water flows into Rekawa Lagoon are analyzed, it is possible to create consensus about proposed interventions by insuring that decision-making processes are open and transparent.

This creation of consensus through open deliberation seems to have occurred at both SAM sites. There seemed to be general agreement among the stakeholders about the resource management problems at both sites. Moreover, members of the evaluation team heard few criticisms of the resource management strategies or the actions identified in the plan.

While there is general agreement about the resource problems and intervention strategies, one issue emerged which may be related to participation. One major stakeholder group — local government officials at Hikkaduwa — seemed not to understand or accept their role in the implementation process. Participation in the coordinating committee appears to have been indifferent. One local official noted that agency representatives varied from one meeting to the next. The Divisional Secretary, who chairs the coordinating committee, had not called a meeting of the SAM coordinating committee since May 1996, a period of seven months. (She was subsequently instructed to hold monthly meetings by the Additional Secretary of the Ministry of Public Administration, Home Affairs, Plantation Industry and Parliamentary Affairs.) She indicated that she thought meetings of the coordinating were useless because no money was available for implementation, a situation she blamed on the donor agency.

The Divisional Secretary's misunderstanding regarding funding sources for the plan and her unwillingness to chair meetings of the coordinating committee does point to a potential issue regarding participation. At both Rekawa and Hikkaduwa, local and national agencies are assigned implementation responsibilities in the plan. Some of the responsibilities are regulatory, but many involving funding management initiatives such as the boat harbor at Hikkaduwa. It is not clear whether and to what degree local and national government participants in the SAM planning processes saw themselves as committing their agencies to fund initiatives identified in the two SAM plans. Agency representatives participated in both SAM project planning processes, but the long-term implications of their participation in terms of commitment to the specifics of the plan are unclear, particularly at Hikkaduwa.

A third purpose of participation is the mobilization of community interest and support. Participation processes can stimulate community interest and voluntary activities to support implementation processes. Participation at both SAM sites seems

to have successfully mobilized community support, but mobilization of interest appears to have been greater at Rekawa. Interest and support among resource users was high at Hikkaduwa, particularly among representatives of the Association of Tourist Board Approved Hoteliers of Hikkaduwa, the Hikkaduwa Small Hoteliers and Restaurant Association and the Glass Bottom Boat Owners' Association. Representatives of these groups noted that the SAM project represented a start at collective action. "After all these years we finally have a forum where we can take issues", noted one hotel operator. But others asserted that the SAM project exists primarily to serve the interests of the hotel operators and tourist industry.

At Rekawa, community mobilization appears to have deeper roots. The steering committee meets monthly. A Rekawa Community Coordinating Committee has been formed. In addition, a Rekawa Development Foundation, comprised of a variety of community organizations, has been organized to propose projects and seek funding. Youth and women's groups have been organized. Community catalysts, eight young people from the area, have been hired to help with the mobilization efforts and community research. For their work they get a bicycle and a small monthly stipend. Resource user groups, such as the Lagoon Fisheries Cooperative, are also an important part of the mobilization efforts.

4.2. Designation of SAM boundaries

Designating the boundaries of SAM projects is a critical first step in the planning process, particularly in projects with characteristics of common property regimes [20]. Boundaries indicate the focus of SAM project activities. They also indicate which resource users are included in the project and which are excluded. Typically a 'special area' identified for intensive management will include both the resources that are degraded and depleted and the use activities resulting in those resource conditions. Hence, boundaries are typically formulated on the basis of ecological criteria and political/economic criteria.

It is striking that neither Environmental Profiles nor the SAM Plans for Rekawa or Hikkaduwa reveal much about the designation of the boundaries of the two existing SAM sites. In the case of Rekawa, *Coastal Environmental Profile of Rekawa Lagoon* indicates that a workshop of government officials held in Tangalle in 1992 chose the boundaries of the Rekawa site by designating "the Rekawa Lagoon, its environs and its immediate catchment area" [24]. Hence, ecological criteria are cited as the basis for designating boundaries, but the boundaries themselves follow those established for Grama Niladhari (GN) Divisions. The SAM site for Rekawa includes seven Grama Niladhari divisions, of which four actually border the lagoon.

For Hikkaduwa, the SAM project emphasis is on the Marine Sanctuary, and the beach front areas immediately adjacent to the Marine Sanctuary. The Marine Sanctuary boundary has recently been enlarged to create a nature reserve which includes the rocky islets. The new boundary enlarges the sanctuary from 110 to 250 acres. Technically, the thirteen Grama Niladhari divisions from Totagamuwa in the north to Patuwatha in the south are part of the Hikkaduwa SAM project site, although the landward area of SAM site on the inland side of the road receives very little attention in the plan.

At least two people interviewed suggested that the Hikkaduwa boundary was "inadequate" for management purposes, but it is not clear whether the perceived inadequacy referred to the established boundary including the 13 GN divisions or the de facto boundary which focuses primarily on the sanctuary and adjacent uses. The larger landward boundary does make it possible to engage in a more comprehensive approach to 'growth management' in the Hikkaduwa area. With the larger management area, it is possible to facilitate relocation of the coastal highway and other management initiatives designed to reduce pressures on the sanctuary.

Finally, it is not clear what legal status SAM boundaries have or whether they are primarily an administrative artifice. The legal status of the boundary might be an issue if special funding sources were designated for capital improvements at either site or if micro-enterprises were developed exclusively for residents of a SAM site.

4.3. Quality of technical basis for management

CRMP funded or facilitated a substantial amount of technical analysis as part of the planning work at both sites. At Hikkaduwa, analysis of the health of the reef, a tourism study, water quality sampling, and an analysis of sources of pollution were among the studies conducted. In addition, both the National Water Supply and Drainage Board and World Health Organization completed wastewater disposal feasibility studies. The Ministry of Fisheries and Aquatic Resources is facilitating analysis of coastal engineering, credit facilities and social infrastructure as part of a larger regional analysis funded by the Asian Development Bank.

At Rekawa, an analysis of coral lime production was one of several social and economic studies conducted. Others included a socioeconomic study, a health and sanitation survey and surveys of women's status and of volunteer organizations. Studies of the hydrology of the lagoon, the feasibility of aquaculture operations, shrimp recruitment and turtle conservation were also undertaken.

A total of about $285,000 was spent on technical studies at the two sites. A review of the technical and interviews with some of the participants led to several observations. First, the technical process was organized and directed by planners rather than residents and user groups. Some residents reported that that greater consultation with users groups would have made some of reports unnecessary or, in some cases, would have revealed the existence of information unfamiliar to the analyst preparing the report. Second the technical analysis tended to be fragmented rather than integrative. Individual sector reports were prepared. This led to some overlap and redundancy — as well as some gaps — in the environmental analysis. Third, there is little evidence of effort to identify 'local knowledge' on resource conditions or use patterns.

There was general agreement that the environmental profiles prepared for each of the two sites provide very useful syntheses of conditions at the two sites [24,25]. Two issues were identified as central to planning for future SAM sites in Sri Lanka:

- How can planners more effectively incorporate "local knowledge" in background studies?

- In the absence of donor funding, what are the essential technical studies that must be conducted?

4.4. Current status of implementation activities at both sites

Both SAM projects are based on strategies for improving coastal resource conditions. Plan "success" assumes both a valid technical theory and successful implementation of planned activities. A valid technical theory is the one based on the correct identification of activities leading to the degradation and depletion of coastal resources and the design of ameliorative interventions to reduce or impede these activities.

The SAM projects are based on a 5-year management strategy. Since plan implementation is less than a year old it is too early to make judgments about the effectiveness of the interventions, but it is possible to assess the implementation to date of the major activities and to highlight potential implementation problems.

4.4.1. Hikkaduwa

The *Special Area Management Plan for Hikkaduwa Marine Sanctuary and Environs* identified fifteen strategies for Hikkaduwa along with 116 specific actions. The major problems which motivated the designation of the SAM project at Hikkaduwa are outlined below along with a brief status report on the implementation activities associated with each problem

- *Degradation of coral reefs and marine life due to inadequate anchorage for fishing boats and conflicting uses of the sanctuary*. Because oil and petrol wastes from the fishing boats degrade waters in the near-shore waters and because the boats occupy space in the sanctuary, relocating fishing boats to an enlarged fishery harbor is viewed by many in the Coordinating Committee as the most important implementation activities. Hikkaduwa Harbor is currently in competition with two other harbors (Dodanduwa and Weligama) for limited funds for rehabilitation. In addition, new Nature Reserve Boundaries increasing the size of the sanctuary from 110 to 250 acres have been designated. The Department of Wildlife Conservation (DWLC) has increased staff deployment to eight rangers. This new staff deployment will make night patrolling possible. DWLC is also seeking funding for a Visitor's Center.
- *Deteriorating coastal water quality due to improper sewage and waste disposal*. Some hotels are still periodically pumping wastes into the ocean, but the major pollution sources have been identified. The Southern Provincial Council is coordinating a detailed feasibility study, funded by Australian foreign assistance, of a wastewater facility at Hikkaduwa.
- *Excessive noise, congestion and traffic speed*. Although a new by-pass road is proposed as part of the Urban Development Authority's five year plan to replace the existing near-shore road, relatively few short-range activities have been taken to control traffic through Hikkaduwa.
- *Increasing intensity of beach and sanctuary use*. The maximum number of glass bottom boats allowed was once set at 50. Seventy boats are now registered with the

local government authority and an additional five are unregistered. Because the sanctuary is effectively an 'open access' resource, Glass Bottom Boat Owners Association (GBBA) members do not have the legal authority to restrict entry to new boats although members agree that limits are necessary. The local government is unwilling to limit access (even though they register boats), but access can be controlled by DWLC now that regulations have been gazetted. GBBA members also express a willingness to assist in designing procedures for determining the number and timing of boats viewing the reef at any particular moment. Implementation of such rules also requires satisfactory resolution of the issue of how many jetties are to be built and where they are located.

- *Lack of alternative forms of income generation*. Some efforts have been made to recognize small-scale tourism activities and to draw them into the planning and management process.

4.4.2. Rekawa

In Rekawa, 16 strategies and 116 specific actions were outlined in the SAM plan as a means of dealing with several problems:

- *Poverty in the community*. Some community awareness programs on the relationships among people and natural resources have been organized. A chicken farm was organized along with a bee keeping project. A freezer was purchased for the lagoon fishermen to allow they greater marketing flexibility.
- *Over-fishing in Rekawa Lagoon*. The Rekawa Lagoon Fishery Cooperative Society adopted rules governing lagoon access and gear requirements. The regulations are being reviewed by the Ministry of Fisheries. Government assistance is being sought to help enforce access rules to limit access of non-residents.
- *Reduced flow of fresh water and sea water in the lagoon*. A poorly constructed causeway has reduced lagoon flushing. University engineering students designed a modified bridge. A contract for bridge reconstruction has been awarded.
- *Coral mining, lime production and sand mining*. Educational efforts have helped stop coral mining.
- *Sea turtle egg poaching*. A foreign-funded sea turtle conservation group already exists at Rekawa. While there was some initial community resistance to the foreign group, relations with the community are now generally good. Eighteen people are or have been employed by the project

4.5. Quality of SAM project design and implementation

The coastal management strategies listed above provide a partial picture of the intended scope of the SAM projects.

Preliminary judgments about the quality of SAM project design can be based on both process criteria and substantive criteria. In terms of process, assessment focuses on the degree to which relevant stakeholders participated in the process, their perceptions of the usefulness of their participation effort, and transparency of decision-making. These process judgments shape their perceptions of the legitimacy of the

planning process and proposed project activities. Perceived legitimacy and stakeholder acceptance, in turn, are critical factors in insuring the effective implementation [26].

Judgments about the substance of proposed management are based on several considerations: To what extent is the SAM project perceived as focusing on the most important coastal management problems? Have problem causes have been correctly identified? Are resource management strategies technically valid? To what extent are management strategies politically acceptable and practically feasible? The consistency of the substance of the plans with national coastal management objectives is also a criterion.

Assessments of the quality of participation efforts leading to the design of the projects are elaborated elsewhere in this report. With some exceptions already noted in Hikkaduwa, the participation efforts have been quite successful. Resource user groups have been mobilized and continue to participate. Planning processes — and the resultant plans — appear to be regarded as politically legitimate by resource user groups.

Participants in the planning processes generally agree that the two projects are focusing on the right coastal problems. Both plans focus on activities degrading and depleting coastal resources. At Hikkaduwa those activities include improper waste disposal, exploitation of the reef, boat congestion in the Sanctuary, etc. At Rekawa, over-fishing in the lagoon, inadequate water circulation in the lagoon, coral mining are among the major resource use problems. Both plans are also based on the recognition that resource exploitation has to be viewed in a larger context of livelihood issues. Both include poverty alleviation as part of the general strategy of SAM management, although it is a more explicit part of the Rekawa project.

While the national coastal management program is based largely on a regulatory strategy, the two SAM projects include several types of management interventions, including education and awareness programs, collaborative self-management, capital development projects, micro-enterprise development. Assessments of the technical validity of intervention strategies have to be done on an activity by activity basis. A key factor in assessing the technical validity of the proposed management activity is intervention complexity. From the technical point of view, 'simple' interventions are those for resource management problems with well-understood causal dynamics. From the point of view of technical complexity, modifying the causeway at Kapuhenwala, building a sewage treatment plant at Hikkaduwa or enlarging the Hikkaduwa boat harbor are relatively simple, engineering-type interventions. Known technologies are applied to well-understood physical problems.

At the other end of the complexity continuum are problems which are not fully understood or those for which technologies are less certain. Poverty alleviation problems for which economic development projects have been planned are the most obvious examples. The success of poultry raising, cashew tree planting and livestock farming as poverty alleviation, for example, depend on so many environmental, educational, market and motivational factors that their potential for success if implemented is extremely difficult to assess.

Most of the implementing activities in the two SAM projects fall somewhere between these two extremes. Zoning schemes, growth management plans, collaborative self-management programs have all been successfully implemented as part of coastal management programs somewhere. The success of these initiatives in the Hikkaduwa and Rekawa context is related less to their technical validity than to the priority assigned to them — and the resources committed to them — by implementing officials and to their acceptance by SAM site residents.

A second dimension of the validity of the proposed implementing activities is political. The degree of agreement among stakeholders at each site about the importance of particular coastal resource management problems and their agreement about the effectiveness of proposed interventions also shapes assessments of the validity of proposed activities.

When there is broad agreement about the problem and the appropriateness of the proposed solution, prospects for effective implementation are higher. Modifying the causeway at Kapuhenwala is illustrative of this situation. A second type of situation arises when interventions are technically valid, but there may be resistance to their use, as is the case with tighter building regulations and setback requirements at Hikkaduwa. Third, there are those situations in which there is agreement about the need for intervention, as is the case with poverty alleviation efforts, but uncertainty about the potential effectiveness of specific micro-enterprise initiatives. Finally, there are circumstances in which there is both lack of agreement about the problem and the appropriateness of the proposed solution. Proposals to construct large aquaculture enterprises at Rekawa perhaps fall into this category.

In terms of the two SAM plans, most of the scores of proposed interventions can help improve resource conditions if implemented, but the challenge is in organizing sufficient political support to encourage effective implementation. This is a significant implementation concern. It appears that local government officials in Hikkaduwa, for example, are not particularly motivated to implement particular initiatives in the plan. Increasing their incentives to implement the plan is a major challenge.

In addition to validity, proposed management activities must also be assessed in terms of feasibility. The feasibility of proposed implementing activities is obviously based in part on the resources available for implementation. Some of the proposed implementing activities are very modest in terms of resource requirements. Lagoon fishermen can develop rules to govern fishing gear and practices without funding from government agencies. The Department of Wildlife Conservation can cooperate with members of the Glass Bottom Boat Association to design reef access rule without major funding. However, a few of the major management initiatives at both sites — the causeway at Rekawa, the boat harbor at Hikkaduwa and the waste treatment plant at Hikkaduwa — are capital intensive projects of uncertain priority within the responsible ministries.

A second aspect of feasibility is coordination costs [21]. Several of the proposed activities are the responsibility of a single department or ministry. Others require the cooperation of several ministries. The Coastal Lagoon Environmental Education center at Rekawa and growth management plan in Hikkaduwa are examples of initiatives that require a substantial amount of inter-ministry coordination. In

general, the higher the coordination costs, the less likely an initiative is to be implemented. Overcoming coordination costs requires a lead agency willing to devote a substantial portion of its resources to coordination and implementation.

Both of the SAM project plans are based on detailed environmental assessments and other technical analyses which document resource problems. Both are based on extensive consultation with affected governmental, non-governmental and community stakeholders. Both plans are consistent with national coastal management objectives. Both plans outline comprehensive coastal resource management strategies for the two sites. In general the interventions are based on valid technical theories. However, the availability of resources for implementation, the political priority assigned to specific activities and the feasibility of specific interventions is difficult to assess.

While both plans identify scores of implementation activities, neither of the plans establishes implementation priorities. Informal priorities have been discussed by stakeholders at both sites. At Rekawa, improving water circulation in the lagoon by modifying the causeway, modifying lagoon fishing rules, increasing access to drinking water and improving livelihood activities are all identified by some stakeholders as priorities. At Hikkaduwa, rules governing the glass bottom boats, enlarging the harbor and building jetties are all identified informally as high-priority interventions.

4.6. Transparency of management decisions

'Transparency' is both an objective and subjective condition. It refers both to the degree of openness in management decision-making and the degree to which stakeholders in a co-management process perceive decision-making procedures to be clear and open. Transparency contributes to perceptions of legitimacy, community acceptance and support.

The first draft of the Rekawa SAM plan was done 'in-house' at CRMP. However, it was based on a substantial amount of community discussion and the active participation of the Rekawa Special Area Management Coordinating Committee. There seemed to be broad agreement with the resource management strategy outlined in the SAM plan. Early in the planning processes there were discussions about large-scale aquaculture operations being located in the Rekawa area. An aquaculture suitability study was commissioned by CRMP. Community residents protested that aquaculture was an inappropriate use and, to date, there has been no further discussion of locating aquaculture at the Rekawa SAM site.

Steering committee meetings are held regularly and are well-attended. The evaluation team heard no complaints about how decisions by the steering committee were made or concerns that an unidentified 'they' were planning activities that would be inappropriate for Rekawa. One factor contributing to the high level of trust that seems to be associated with the Rekawa SAM project is the high level of local leadership. The president of the Rekawa Development Foundation is able to represent community concerns very effectively and to translate government activities in ways that are persuasive to the community. The presence of the seven community facilitators and the excellent mobilization and liaison activities provided by the CRMP project officer

and the CCD staff representative have contributed to the feelings of trust that have developed at the Rekawa site.

Feelings of transparency were less evident at the Hikkaduwa SAM site. Ironically, it was primarily local government officials who raised questions about planning and management decisions. The Divisional Secretary, the local public health official and others expressed uncertainty about whom the plan served and how resource management activities were to be funded. The Divisional Secretary, in particular, seemed to expect donor funding for many of the management activities; a fact that reflects a misunderstanding of the SAM enterprise. Some lack of trust was expressed by specific user groups as well. Some of these feelings about lack of transparency were associated with feelings that the project design process was dominated by the major hotel representatives and it was their interests which were primarily served in the plan. The predominance of foreign CRMP staff in the planning process and the fact that some meetings were partly conducted in English also appears to have contributed to some feelings of alienation from the planning process at Hikkaduwa.

While there are differences in the planning and management processes at the two sites and transparency appears to have been higher at Rekawa, the degree of trust and legitimacy among most of the stakeholders appeared to be substantial at both sites.

4.7. Sustainability of resource management activities

The SAM projects exist both as plans outlining a wide range of activities designed to improve resource conditions and as networks of user groups, non-governmental organizations and local and national government organizations and individuals who have been mobilized in the planning process. The SAM projects have helped encourage greater collaboration and cooperative both among members of resources users groups and among user groups, government agencies and non-governmental organizations. A central question for the future of the projects is whether this intra-group and inter-group collaboration and cooperation can be sustained.

Sustainability has a variety of meanings. In the context of renewable resource management it usually means insuring rates of resource use or extraction no greater than the rate of resource renewal or replenishment. The principle of renewable use rates is well understood, but practical problems of establishing such rates for a fish stock, an aquifer, a forest or other resources abound.

Making judgments about the sustainability of collaborative or cooperative intra-group or inter-group initiatives is also difficult. Intra-group cooperation among user groups, such as lagoon fishermen, is associated with perceptions that all participants are cooperating (i.e. no 'free-riders'), that resource conditions are or will improve through cooperative behavior, that outside resource users will be controlled and members are not totally dependent on the resource for their livelihood. Assessing the sustainability of any such group involves a complex calculus based on extended observations and interviews.

It is difficult to assess the prospects for sustainability of the two major user groups: the Glass Bottom Boat Association at Hikkaduwa and the Rekawa Lagoon Fisheries Society. It may be significant that both groups are still active and members of both

groups profess a desire to continue their efforts. The sustainability of the GBBA seems most at risk at the moment. The number of boats has increased to more than 70 and the economic pressure on individual boat owners in mounting. If the DWLC can work with the GBBA to establish reef access rules and will assist in enforcing those rules, collaborative efforts have a good chance of being sustained.

The more general issue of whether residents will continue to participate in meetings and contribute their time and effort to collaborative efforts depends both on community leadership and the incentives that cooperation offers. To the extent that people see their individual and collective efforts result in positive change, the prospects for continued cooperation are increased. If access to water at standpipes is increased in Rekawa, if jetties are constructed or the harbor rehabilitated at Hikkaduwa, people are much more likely to be encouraged about further collaborative efforts.

Hence, both SAM projects are at a critical moment. Both projects need to demonstrate their value by implementing some of the key planned activities. User groups have already undertaken some actions, but the inability or unwillingness of government agencies do more to demonstrate their commitment to the SAM process undermines the sustainability of group coordination and collaboration.

5. Evaluative conclusions and reflections on Sri Lanka's SAM projects

1. *Both SAM projects show evidence of successful design and preliminary implementation*. While implementation of the two SAM projects has only just begun, the preliminary evidence is that these two projects are well-designed and the communities are well-organized. These SAM projects appear to justify the enthusiasm for a community-level approach to coastal management that complements the national approach.
2. *Hikkaduwa and Rekawa were good choices for Sri Lanka's initial SAM pilot projects*. More intensive coastal management was needed at both sites. User groups at both sites were motivated to collaborate with each other and with government to improve coastal resource conditions.
3. *Making coastal user groups a primary focus for community organization and mobilization appears to have been an effective strategy*. SAM projects are organized on the assumption that residents will cooperate to undertake activities that are in the collective interests of the group even when they have no immediate benefit to individuals. However, the emphasis is on organizing resource user groups — fisherfolk, glass bottom boat operators, hotel owners and operators, et al. — rather than the 'community' as a whole. The organizing assumption is a practical one. It is based on the recognition that users in a well-defined geographic area identify with each other and can be persuaded to engage in cooperative behavior to promote their mutual interests. Indeed, the organization of user groups has a long tradition in Sri Lanka so using resource user groups as a basis for collective action has not been particularly difficult.

   The emphasis on user groups is also based on the implicit understanding that there is no single 'community' in the sense of a "single, cohesive social organization

residing in a well-demarcated area" [27]. References to "the community" as if it is an organic whole misrepresent the social, economic and political complexity of SAM sites. Emphasis on 'the community' as the primary locus of concern also diminishes the importance of other stakeholders in local management including local support institutions (e.g. NGOs, government agencies), outside local beneficiaries (i.e. those who benefit from the resource but do not live in the vicinity of the resource), central resource institutions (i.e. government and non-government actors who constitute a source of expertise and resources for local support institutions), and external stakeholders (i.e. those who may benefit from improved resource management, but who are not in the vicinity of the resource and have no direct interaction with it) [27].

4. *Resource user groups have been active participants in both projects.* The participation of user groups and non-governmental organizations in SAM project planning and preliminary implementation activities has been impressive. The lagoon use rules developed by the Lagoon Fishers Association at Rekawa and those proposed by the Glass Bottom Boat Operators Association in Hikkaduwa are indicative of actions taken by users groups. User groups have been particularly active at both sites in identifying resource depleting or degrading uses and in developing particular recommendations to be part of the SAM project plans.
5. *The planning for the two SAM projects was supported by generally high quality technical analysis.* The availability of international donor funding made it possible to supplement Sri Lankan government funding for a variety of technical studies at the two SAM sites. At Hikkaduwa, analysis of the health of the reef, a tourism study, water quality sampling, and an analysis of sources of pollution were among the studies conducted. In addition, both the National Water Supply and Drainage Board and World Health Organization completed waste water disposal feasibility studies. The Ministry of Fisheries and Aquatic Resources is facilitating analysis of coastal engineering, credit facilities and social infrastructure as part of a larger regional analysis funded by the Asian Development Bank. At Rekawa, an analysis of coral lime production was one of several social and economic studies conducted. Other studies included a socioeconomic profile, a health and sanitation survey and surveys of women's status and of volunteer organizations. Studies of the hydrology of the lagoon, the feasibility of aquaculture operations, shrimp recruitment and turtle conservation were also undertaken. However, the availability of international donor funding for technical studies at the two pilot projects in Sri Lanka obscures the issue of what constitutes *de minimis* technical analysis when resources for analysis are greatly limited as they are likely to be at other SAM sites in Sri Lanka.
6. *Neither SAM project designs identify explicit high priority implementation activities.* Both SAM project plans identify scores of activities designed to improve resource conditions or improve livelihoods. Generally, those most responsible for plan management tend to talk about these activities as items on a general agenda for action rather than a 'blueprint' to be strictly followed. It is also obvious from discussions that there are a few key actions at each site that are essential to project success: causeway repair, effective prohibitions of coral mining and fishing rules at

Rekawa, for example, and jetties, harbor repair and rules governing glass-bottom boats at Hikkaduwa. Finding a way to express strategic priorities, identify key actions and develop implementation schedules should be considered an issue in designing the next generation of SAM plans.

7. *Support for project implementation by national and local government agencies has been mixed.* The SAM projects are both organized on the premise that user groups alone are not likely to be sufficient to achieve resource management objectives. Both projects are based on the recognition that government must be involved, not just to coordinate government management activities and provide resources, but to provide legal and administrative support to user group regulations, particularly with regard to resource users from outside the community. For example, the glass bottom boat owners and operators at Hikkaduwa recognize the need for regulations governing the total number of boats and access to the reef. However, lacking the legal means to control access they have acquiesced when outside entrepreneurs introduce new boats.

   One of the key design assumptions of SAM projects in Sri Lanka is the active role of government. Building in government participation is based on the recognition that both government resources and legal/administrative assistance are needed to carry out local plans. The somewhat passive participation of local government in Hikkaduwa is a reminder that government officials, like coastal users, need incentives to encourage participation. Constructing appropriate incentives is a key task for future SAM projects.
8. *Part of the relative scarcity of government actions can be attributed to budget cycles and other 'normal' bureaucratic conditions operative at both sites.* It seems that a few government officials are at best lukewarm about the concept of SAM projects. At Hikkaduwa the original unwillingness of the DS to convene meetings of the coordinating committee for a seven month period may be symptomatic of a larger problem of creating the conditions for effective participation of government in co-management efforts. To some officials, the SAM projects appear to be understood as outside the scope of local government responsibility; as an externally-imposed burden rather than a core responsibility or opportunity.
9. *High quality project facilitators are one of the primary reasons for the success in mobilizing users, non-government organizations and government officials at both project sites.* CCD and CRMP staff have been instrumental in providing needed liaison services and mobilizing technical and political support. In addition, the eight community facilitators hired for work in Rekawa were a critical factor in mobilizing interest and support at that project site.
10. *Sustainable SAM management requires that user groups perceive incentives to continue to engage in collaborative management.* The SAM projects rely on co-management; local government agencies and user groups cooperating to insure that coastal resource use occurs at sustainable rates. SAM projects require individual users to moderate some of their potential resource use for the greater good. Fisher-folk, for example, are required to take fewer fish, to forego juveniles, to not use gear that would increase efficiency of catch or to moderate their harvesting behavior in other ways established by user group rules. Individual

sacrifice occurs both because individual users are persuaded of the usefulness of sacrifice and because the potential costs of non-compliance with resource use rules are perceived as outweighing the benefits.

Longer-term individual sacrifice is contingent, however, both on the perceived imminence of increased resource use, on the certainty that others are not benefiting unfairly and on the perceived legitimacy of the rules and conflict resolution procedures. In this context, co-management in the form of supporting local government institutions is essential to help minimize 'free-riding' (i.e. resource use by those not abiding by the resource use rules), to help enforce rules and to help with conflict resolution. If the costs of non-compliance with rules is low, if 'free-riding' is rampant or if users don't begin to see some improvement in resource conditions, the incentives to continue to engage in sacrifice may be greatly reduced.

Some stakeholders at both project sites seem to recognize that project sustainability is highly contingent and that current actions (and non-actions) will shape the prospects for sustainability.

11. *Co-management systems need time to evolve.* Both SAM projects have been designed as five-year projects. The five-year project horizon recognizes that implementing a SAM process involves changes in user group and local government behavior. Because user groups have to design collaborative processes and local government agencies have to develop new working relationships, SAM processes take some time to evolve. The impacts of the SAM process — at least in terms of changes in resource conditions — are not likely to be visible in the short run. However, it is possible to assess SAM projects in terms of planning and management milestones; on the degree to which particular planned events, such as the formation of user groups and the design of user group management processes, are occurring. In terms of planning and management milestones, both projects show great promise.

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